



*Commonwealth of Virginia*

***VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY***

**Federal Operating Permit  
Article 1**

This permit is based upon the requirements of Title V of the Federal Clean Air Act and Chapter 80, Article 1 of the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution. Until such time as this permit is reopened and revised, modified, revoked, terminated or expires, the permittee is authorized to operate in accordance with the terms and conditions contained herein. This permit is issued under the authority of Title 10.1, Chapter 13, §10.1-1322 of the Air Pollution Control Law of Virginia. This permit is issued consistent with the Administrative Process Act, and 9 VAC 5-80-50 through 9 VAC 5-80-300 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution of the Commonwealth of Virginia.

Authorization to operate a Stationary Source of Air Pollution as described in this permit is hereby granted to:

Permittee Name: University of Virginia  
Facility Name: University of Virginia  
Facility Location: University of Virginia Campus  
Charlottesville, Virginia  
Registration Number: 40200

Permit Number  
VRO 40200

Effective Date  
February 2, 2017

Expiration Date  
February 1, 2022

Significant Modification Date  
**April 13, 2020**

A handwritten signature in blue ink, appearing to read "BK Jull", written over a horizontal line.

Deputy Regional Director

April 13, 2020  
Signature Date

Permit consists of 132 pages  
Permit Conditions 1 to 246  
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## **Facility Information**

### **Permittee**

University of Virginia  
Charlottesville, Virginia

### **Responsible Official**

Ms. Colette Sheehy  
Senior Vice President for Operations

### **Facility**

University of Virginia  
P. O. Box 400228  
Charlottesville, VA 22904-4228

### **Contact Person**

Ms. Kristin Carter  
Associate Director for Environmental Resources  
(434) 982-5034

**County-Plant Identification Number:** 51-540-0003

### **Facility Description:**

SIC Code: 8221 – Colleges/Universities

NAICS Equivalent Code: 611310 – Colleges, Universities and Professional Schools

The University of Virginia (UVA) is a publicly funded institute for higher education located in Charlottesville, Virginia. UVA is an extensive campus with facilities including classrooms, dormitories, laboratories, medical center, athletic complexes, research facilities, and various support facilities. Emissions sources at UVA consist of a Main Heating Plant (MHP), several smaller heating plants, a coal and ash handling system, other fuel burning equipment, electrical generators, woodworking equipment and medical equipment.

### Main Heating Plant

The MHP currently consists of a total of six boilers of differing sizes. Boilers 1R, 2R, 3R, 4R, and 5 produce steam for heat and related university operations; Boiler 6 produces hot water for university operations. In addition to the boilers, the MHP also has a lime storage silo to support scrubber operations. Equipment at the MHP includes:

- INDECK Coal and Natural Gas-fired Boiler with a maximum rated heat input capacity of 95 MMBtu/hr (Boiler 1R – Ref. No. 7103-1-01R)

- IBW Coal and Natural Gas-fired Boiler with a maximum rated heat input capacity of 95 MMBtu/hr (Boiler 2R – Ref. No. 7103-1-02R)
- Nebraska Natural Gas and Distillate Oil-Fired Boiler with a maximum rated heat input capacity of 112.5 MMBtu/hr (Boiler 3R – Ref. No. 7103-1-03R)
- Nebraska Natural Gas and Distillate Oil-Fired Boiler with a maximum rated heat input capacity of 112.5 MMBtu/hr (Boiler 4R – Ref. No. 7103-1-04R)
- Keeler Coal and Natural Gas-Fired Boiler with a maximum rated heat input capacity of 112.5 MMBtu/hr (Boiler 5 – Ref. No. 7103-1-05)
- Victory natural gas-fired boiler with a maximum rated heat input capacity of 100 MMBtu/hr (Boiler 6 – Ref. No. 7103-1-06)
- SPE Lime Storage Silo

#### Coal and Ash Handling System at Main Heat Plant

Coal is transported to the coal handling facility mostly via railcar, although during emergency situations coal can be delivered by trucks. The coal handling system consists of four coal silos, three coal bunkers and miscellaneous coal conveyors and material handling equipment. The ash handling system consists of two ash storage silos with associated conveyance and unloading systems.

#### Other Fuel Burning Equipment

Due to the extensive nature of the UVA academic campus, it is not feasible for the Main Heating Plant to provide steam and hot water to all of the contiguous buildings. Therefore, some facilities maintain separate furnaces and small boilers for these purposes. These smaller units burn either distillate oil or natural gas.

#### Electrical Generators

UVA maintains emergency electrical generators across campus. The generators are fueled with diesel fuel (distillate oil), natural gas, or propane. The generators range in size up to 2,500 kilowatts (kW). In 2010, UVA enrolled all its generators in an Emergency Load Response Program (ELRP). However, based on a May 2015 federal court ruling, most of these generators are no longer eligible to operate in this program without the addition of emission controls. Operation of each emergency electrical generator is less than 500 hours per year.

#### Woodworking Equipment and Spray Booth

Maintenance activities performed at UVA include woodworking. UVA has several woodworking shops throughout the campus. Small-job painting and finishing are performed in addition to woodworking at most of the shops. Operations at these locations do not include the manufacturing of wood furniture. Manufacturing of wood furniture takes place at the Facilities Management (FM) Cabinet Shop (Ref. 0273-1-01). The exhaust from the FM Cabinet Shop woodworking operations passes through a baghouse system to remove particulates and returns to

the building (zero discharge). Coatings such as paints and stains are applied in a spray booth (Ref. 0233-SCB) which has filters to remove airborne overspray.

#### Medical Equipment

UVA maintains two ethylene oxide sterilizers for hospital use. The sterilizers are located at the University's hospital and are used to sterilize various surgical and other medical equipment. These sterilizers are exempt from Subpart O MACT requirements under 40 CFR 63.360, and from Subpart WWWW MACT under 40 CFR 63.10382 (a).

## Emission Units

Equipment to be operated consists of the following:

### MAIN HEAT PLANT

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
7103-1-01R	7103-1	BOILER 1R – INDECK (2007) (Coal and Natural Gas)	95 Million BTU/hr	Baghouse, Semi-dry Scrubber, Flue-gas recirculation (FGR) system, over-fire air & Low NOx Burner (boiler equipped with O <sub>2</sub> trim system)	7103-BH1R & 7103-SB1	PM-10 , Lead, SOx, and NOx	7/5/05 Permit <sup>b</sup> (Amended 11/26/05, 10/19/07, 12/16/09, 3/22/10, 3/25/13, 5/29/15, and 8/13/19)
7103-1-02R	7103-1	BOILER 2R – IBW (1987) (Coal and Natural Gas)	95 Million BTU/hr	Baghouse, Semi-dry Scrubber, Flue-gas recirculation (FGR) system, over-fire air & Low NOx Burner (boiler equipped with O <sub>2</sub> trim system)	7103-BH2R & 7103-SB2	PM-10 , Lead, SOx, and NOx	7/5/05 Permit <sup>b</sup> (Amended 11/26/05, 10/19/07, 12/16/09, 3/22/10, 3/25/13, 5/29/15, and 8/13/19)
7103-1-03R	7103-1	BOILER 3R – Nebraska (2005) (Distillate Oil and Natural Gas)	112.5 Million BTU/hr	Flue-gas recirculation (FGR) system & Low NOx Burner (boiler equipped with O <sub>2</sub> trim system)	-	NOx	7/5/05 Permit <sup>b</sup> (Amended 11/26/05, 10/19/07, 12/16/09, 3/22/10, 3/25/13, 5/29/15, and 8/13/19)
7103-1-04R	7103-1	BOILER 4R – Nebraska (2005) (Distillate Oil and Natural Gas)	112.5 Million BTU/hr	Flue-gas recirculation (FGR) system & Low NOx Burner (boiler equipped with O <sub>2</sub> trim system)	-	NOx	7/5/05 Permit <sup>b</sup> (Amended 11/26/05, 10/19/07, 12/16/09, 3/22/10, 3/25/13, 5/29/15, and 8/13/19)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
7103-1-05	7103-1	BOILER 5 – Keeler (1985) (Coal and Natural Gas)	112.5 Million BTU/hr	Baghouse, Semi-dry Scrubber, Flue-gas recirculation (FGR) system, over-fire air & Low NOx Burner (boiler equipped with O <sub>2</sub> trim system)	7103-BH5 & 7103-SB5	PM-10 , Lead, SOx, and NOx	7/5/05 Permit <sup>b</sup> (Amended 11/26/05, 10/19/07, 12/16/09, 3/22/10, 3/25/13, 5/29/15, and 8/13/19)
7103-1-06	7103-1	Victory – BOILER 6 (2019) (Distillate Oil and Natural Gas)	100 Million BTU/hr	Flue-gas recirculation (FGR) system & Low NOx Burner (boiler equipped with O <sub>2</sub> trim system)	-	NOx	4/3/18 Permit
7103-LM1	-	SPE Lime Storage Silo (2006)	3,900 ft <sup>3</sup>	Cartridge filter	-	PM-10	7/5/05 Permit <sup>b</sup> (Amended 11/26/05, 10/19/07, 12/16/09, 3/22/10, 3/25/13, 5/29/15, and 8/13/19)

### COAL AND ASH HANDLING SYSTEM

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
H1A, H1B, H2A, H2B, H3A, H3B, H4A and H4B	-	Railcar Coal Receiving Hoppers	20 tons/hr (each)	(inside closed building)	-	PM-10	7/23/07 Permit (Amended 4/9/09)
GS1, GS2, GS3, GS4, GS5, GS6, GS7 and GS8	-	Grizzly Screens	400 tons/hr (total)	(inside closed building)	-	PM-10	7/23/07 Permit (Amended 4/9/09)
C1 and C3	-	Coal Conveyors from Grizzly Screens to Chain Elevator	40 tons/hr (each)	Complete enclosure	-	PM-10	7/23/07 Permit (Amended 4/9/09)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
C2 and C4	-	Coal Conveyors from Grizzly Screens to Chain Elevator	80 tons/hr (each)	Complete enclosure	-	PM-10	7/23/07 Permit (Amended 4/9/09)
E1	-	Coal Chain Elevator	80 tons/hr	Complete enclosure	-	PM-10	7/23/07 Permit (Amended 4/9/09)
CCS1	-	Coal Crusher Screen	80 tons/hr	Cartridge filter	-	PM-10	7/23/07 Permit (Amended 4/9/09)
CR1	-	Coal Crusher	25 tons/hr	Cartridge filter	-	PM-10	7/23/07 Permit (Amended 4/9/09)
C5	-	Conveyor from Crusher to Bucket Elevator	80 tons/hr	Complete enclosure	-	PM-10	7/23/07 Permit (Amended 4/9/09)
E2	-	Bucket Elevator	80 tons/hr	Complete enclosure	-	PM-10	7/23/07 Permit (Amended 4/9/09)
C6	-	Coal Conveyor from Bucket Elevator to Coal Silos	80 tons/hr	Complete enclosure	-	PM-10	7/23/07 Permit (Amended 4/9/09)
7103-CS1	7103-CS1	Storage Coal Silo	1,100 ton	Cartridge filter	-	PM-10	7/23/07 Permit (Amended 4/9/09)
7103-CS2	7103-CS2	Storage Coal Silo	1,100 ton	Cartridge filter	-	PM-10	7/23/07 Permit (Amended 4/9/09)
7103-CS3	7103-CS3	Storage Coal Silo	1,100 ton	Cartridge filter	-	PM-10	7/23/07 Permit (Amended 4/9/09)
7103-CS4	7103-CS4	Storage Coal Silo	1,100 ton	Cartridge filter	-	PM-10	7/23/07 Permit (Amended 4/9/09)
C7, C8, C9, and C10	-	Coal Conveyors from Silos to Chain Elevators	20 tons/hr (each)	Complete enclosure	-	PM-10	7/23/07 Permit (Amended 4/9/09)
E3 and E4	-	Coal Chain Elevators	20 tons/hr (each)	Complete enclosure	-	PM-10	7/23/07 Permit (Amended 4/9/09)



Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
C11 and C12	-	Coal Conveyors from Chain Elevator to Coal Bunker	20 tons/hr (each)	Complete enclosure	-	PM-10	7/23/07 Permit (Amended 4/9/09)
B1, B2, and B5	-	Coal Bunkers	80 tons/hr (each)	Cartridge filter	-	PM-10	7/23/07 Permit (Amended 4/9/09)
FAS	FSS-1 to FSS-3	Fly Ash Silo	325 tons	Fabric filter	-	PM-10	7/23/07 Permit (Amended 4/9/09)
BAS	BAS-1 to BAS-2	Bottom Ash Silo	112.9 tons	Fabric filter	-	PM-10	7/23/07 Permit (Amended 4/9/09)

#### OTHER FUEL BURNING EQUIPMENT

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0215-2-01	0215-2	Fulton Model VMP-40 steam boiler (2010) (Natural Gas) PLSB Building	1.595 Million Btu/hr	-	-	-	-
0261-1-01	0261-1	Cleaver Brooks Model CB100-100 (1972) (Natural Gas) Shelburne Hall	4.184 MMBtu/hr	-	-	-	-
0321-1-01R	0321-1	Smith Cast Iron Model 19HE-09 (2017) (Natural Gas) Aerospace Research Lab	1.559 Million Btu/hr	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0550-1-01	0550-1	TELEDYNE LAARS Model HH 3050 IN 04 FC (1994) (Natural Gas) Saunders Hall	3.05 Million Btu/hr	-	-	-	-
0550-1-02	0550-1	TELEDYNE LAARS Model HH 3050 IN 04 FC (1994) (Natural Gas) Saunders Hall	3.05 Million Btu/hr	-	-	-	-
0550-1-03	0550-1	TELEDYNE LAARS Model HH 3050 IN 04 FC (2000) (Natural Gas) Saunders Hall	3.05 Million Btu/hr	-	-	-	-
0580-2-01R	0580-2	Hydrotherm Model KN-16 (2013) (Natural Gas) Carruthers Hall	1.6 Million BTU/hr	-	-	-	-
0595-1-01	0595-1	Cleaver Brooks Model CB 700-150 steam boiler (1982) (Natural Gas) Fontana Food Center	6.277 Million Btu/hr	-	-	-	-
0603-1-01R	0603-1	Hydrotherm Model KN-20 (2013) (Natural Gas) Faulkner House	1.99 Million BTU/hr	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
1603-1-01	1603-1	Fulton Model VTG-4000DF (2020) (Natural Gas and Distillate Oil) Ivy Mountain CUP	4.0 Million BTU/hr	-	-	-	-
1603-2-01	1603-2	Fulton Model VTG-4000DF (2020) (Natural Gas and Distillate Oil) Ivy Mountain CUP	4.0 Million BTU/hr	-	-	-	-
1603-3-01	1603-3	Fulton Model VTG-4000DF (2020) (Natural Gas and Distillate Oil) Ivy Mountain CUP	4.0 Million BTU/hr	-	-	-	-
1760-2-01	1760-2	Cleaver Brooks Model CB/LE 700-250-125 HW (2007) (Natural Gas) Sheridan G. Snyder Building	10.206 Million BTU/hr	-	-	-	-
1760-2-02	1760-2	Cleaver Brooks Model CB/LE 700-250-125 HW (2007) (Natural Gas) Sheridan G. Snyder Building	10.206 Million BTU/hr	-	-	-	-
1760-3-01	1760-3	Fulton Model VMP-150LE steam boiler (2007) (Natural Gas) Sheridan G. Snyder Building	5.978 Million Btu/hr	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
1760-3-02	1760-3	Fulton Model VMP-150LE steam boiler (2007) (Natural Gas) Sheridan G. Snyder Building	5.978 Million Btu/hr	-	-	-	-
1985-2-01	1985-2	Peerless Model LCE-13-W/S (2008) (Natural Gas) Stacey Hall	2.464 Million Btu/hr	-	-	-	-
1985-2-02	1985-2	Peerless Model LCE-13-W/S (2008) (Natural Gas) Stacey Hall	2.464 Million Btu/hr	-	-	-	-
1991-1-01	1991-1	Cleaver Brooks Model FLX-700-350-150 ST Steam boiler (2014) (Natural Gas) Battle Building	3.50 Million BTU/hr	-	-	-	-
2566-1-01	2566-1	Buderus Logano Model GE515/10 (2008) (Natural Gas) Mitchell Apartments	1.66 Million Btu/hr	-	-	-	-
3761-2-01	3761-2	York-Shipley Model SPHV-72-N 094219 steam boiler (2002) (Natural Gas) Aurbach Medical Building	3.019 Million Btu/hr	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
3761-2-02	3761-2	York-Shipley Model SPHV-72-N 094219 steam boiler (2002) (Natural Gas) Aurbach Medical Building	3.019 Million Btu/hr	-	-	-	-
3761-3-01	3761-3	York-Shipley Model SPHV-150-N 096130 (2001) (Natural Gas) Aurbach Medical Building	6.1 MMBtu/hr	-	-	-	-
3761-3-02	3761-3	York-Shipley Model SPHV-150-N 096130 (2001) (Natural Gas) Aurbach Medical Building	6.1 MMBtu/hr	-	-	-	-
5562-1-01	5562-1	Fulton Model PHW-2000 (2013) (Natural Gas) NGRC Addition	2.00 Million BTU/hr	-	-	-	-
5562-2-01	5562-2	Fulton Model PHW-2000 (2013) (Natural Gas) NGRC Addition	2.00 Million BTU/hr	-	-	-	-
5562-3-01	5562-3	Lochinvar Model CPN2072 (2013) (Natural Gas) NGRC Addition	2.07 Million BTU/hr	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
5575-1-01	5575-1	Unilux Bent Water Tube Model ZF1200 (2005) (Natural Gas and Distillate Oil) Massie Road Heat Plant	9.9 Million BTU/hr	-	-	-	10/13/04 Permit (Amended 3/22/10 and 7/18/13)
5575-1-02	5575-1	Unilux Bent Water Tube Model ZF1200 (2005) (Natural Gas and Distillate Oil) Massie Road Heat Plant	9.9 Million BTU/hr	-	-	-	10/13/04 Permit (Amended 3/22/10 and 7/18/13)
5575-1-03	5575-1	Unilux Bent Water Tube Model ZF1200 (2005) (Natural Gas and Distillate Oil) Massie Road Heat Plant	9.9 Million BTU/hr	-	-	-	10/13/04 Permit (Amended 3/22/10 and 7/18/13)
5575-1-04	5575-1	Unilux Bent Water Tube Model ZF1200 (2005) (Natural Gas and Distillate Oil) Massie Road Heat Plant	9.9 Million BTU/hr	-	-	-	10/13/04 Permit (Amended 3/22/10 and 7/18/13)
5575-3-01	5575-3	Unilux Model ZF500W (2014) (Natural Gas) Massie Road Heat Plant	5.4 Million BTU/hr	-	-	-	10/13/04 Permit (Amended 3/22/10 and 7/18/13)
5575-3-02	5575-3	Unilux Model ZF500W (2014) (Natural Gas) Massie Road Heat Plant	5.4 Million BTU/hr	-	-	-	10/13/04 Permit (Amended 3/22/10 and 7/18/13)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
7533-3-01	7533-3	Fulton VTG-6000DF Condensing Boiler (2014) (Natural Gas and #2 Fuel Oil) North Grounds Heat Plant	6.0 Million BTU/hr	-	-	-	-
7533-4-01	7533-4	Fulton VTG-6000DF Condensing Boiler (2014) (Natural Gas and #2 Fuel Oil) North Grounds Heat Plant	6.0 Million BTU/hr	-	-	-	-
7533-5-01	7533-5	Fulton VTG-6000DF Condensing Boiler (2015) (Natural Gas and #2 Fuel Oil) North Grounds Heat Plant	6.0 Million BTU/hr	-	-	-	-
7533-6-01	7533-6	Boiler (TBD) (Natural Gas and #2 Fuel Oil) North Grounds Mechanical Plant	6.0 Million BTU/hr	-	-	-	-
7533-7-01	7533-7	Boiler (TBD) (Natural Gas and #2 Fuel Oil) North Grounds Mechanical Plant	6.0 Million BTU/hr	-	-	-	-

**ELECTRICAL GENERATORS AND FIRE PUMPS <sup>c</sup>**

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0068-1-01	0068-1	Kohler 500ROZD4 Emergency Generator (<12/19/2002) (Diesel) Clark Hall	505 ekW 765 BHP	-	-	-	-
0094-1-01	0094-1	Kohler Model 125REOJB-GA7 Emergency Generator (4/1/2006) (Diesel) Bryan Hall	125 ekW 210 BHP	-	-	-	-
0122-1-01	0122-1	Kohler 40REOZJC Emergency Generator (9/10/2012) (Diesel) Newcomb Hall	40 ekW 80 BHP	-	-	-	-
0125-1-01	0125-1	Kohler Model 15ROZ81 Emergency Generator (<12/19/2002) (Diesel) Central Grounds Garage	15 ekW 20 BHP	-	-	-	-
0126-1-01	0126-1	Kohler Model 300REOZD Emergency Generator (7/1/2003) (Diesel) Clemons Library	300 ekW 490 BHP	-	-	-	-



Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0131-1-01	0131-1	Caterpillar Model D150-8 Emergency Generator (9/1/2007) (Diesel) Elson Student Health	150 ekW 275 BHP	-	-	-	-
0201-1-01	0201-1	Caterpillar Model C27 Emergency Generator (10/29/2013) (Diesel) O-Hill Dining Hall	750 ekW 1214 BHP	-	-	-	-
0204-1-01	0204-1	Kohler Model 180REOZJD Emergency Generator (6/5/2008) (Diesel) Thornton Hall	180 ekW 315 BHP	-	-	-	-
0207-1-01	0207-1	Olympian Model D230P1 Emergency Generator (<12/19/2002) (Diesel) Zehmer Hall	230 ekW 386 BHP	-	-	-	-
0210-1-01R	0210-1	Caterpillar Emergency Generator (TBD) (Diesel) Gilmer Hall	1,000 ekW 1474 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0210-2-01	0210-2	Kohler Model 260RHOZ71 Emergency Generator (<12/19/2002) (Diesel) Gilmer Hall	260 ekW 436 BHP	-	-	-	-
0210-3-01	0210-3	Generac Model 97A 04381S Emergency Generator (<12/19/2002) (Diesel) Gilmer Hall	175 ekW 269 BHP	-	-	-	-
0214-1-01	0214-1	Caterpillar Model C9 Emergency Generator (10/1/2010) (Diesel) Rice Hall	300 ekW 480 BHP	-	-	-	-
0215-1-01	0215-1	Caterpillar Model SR5 Emergency Generator (4/1/2011) (Diesel) Physical & Life Sciences Building	1000 ekW 1502 BHP	-	-	-	-
0228-1-01	0228-1	Onan D60DGCB Emergency Generator (<12/19/2002) (Diesel) Leake Building	60 ekW 102 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0254-1-01	0254-1	Cummins Model DSGAC Emergency Generator (7/15/2014) (Diesel) NRAO/Stone Hall	150 ekW 324 BHP	-	-	-	-
0256-2-01R	0256-2	Caterpillar Model 3512C Emergency Generator (11/20/2018) (Diesel) Chemistry Building	1500 eKW 2206 BHP	-	-	-	3/8/2017 Permit
0264-1-01	0264-1	Caterpillar Model LC5 Emergency Generator (6/1/2009) (Diesel) Bavaro Hall	250 ekW 398 BHP	-	-	-	-
0267-1-01	0267-1	Kohler Model 1000REOZDB Emergency Generator (8/1/2006) (Diesel) Wilsdorf Hall	1000 ekW 1495 BHP	-	-	-	-
0356-1-01	0356-1	Olympian Model D90P1 Emergency Generator (<12/19/2002) (Diesel) High Energy Physics	90 ekW 151 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0396-1-01R	0396-1	Caterpillar Model 3512C Emergency Generator (7/12/2018) (Diesel) Runk Dining Hall	1500 ekW 2206 BHP	-	-	-	3/8/2017 Permit
0401-1-01	0401-1	Kohler Model 180REOZJB Emergency Generator (<12/19/2002) (Diesel) Emmet-Ivy Parking Garage	180 ekW 302 BHP	-	-	-	-
0446-1-01	0446-1	Kohler Model 100REOZJD Emergency Generator (6/1/2008) (Diesel) Culbreth Road Garage	100 ekW 158 BHP	-	-	-	-
0527-1-01	0527-1	Caterpillar Model D125-6 Emergency Generator (9/30/2013) (Diesel) Withers-Brown Hall	125 ekW 217 BHP	-	-	-	-
0528-1-01	0528-1	Generac Model 20A04051-S Emergency Generator (<12/19/2002) (Diesel) Slaughter Hall – ITC	100 ekW 168 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0534-1-01	0534-1	Kohler Model 125ROZ271 Emergency Generator (<12/19/2002) (Diesel) JAG School Addition	125 ekW 207 BHP	-	-	-	-
0551-1-01	0551-1	Cummins Model DFCB-4962632 Emergency Generator (<12/19/2002) (Diesel) Darden Classroom	300 ekW 465 BHP	-	-	-	-
0555-1-01	0555-1	Onan Model GGFD-4962633 Emergency Generator (<12/19/2002) (Natural Gas) Darden Parking Garage	35 ekW 73.8 BHP	-	-	-	-
0580-3-01	0580-3	Caterpillar Model LC7 Emergency Generator (11/17/2011) (Diesel) Carruthers Hall	600 ekW 900 BHP	-	-	-	-
0593-1-01	0593-1	Clark Model JU4H UFAD4G Fire Pump (6/1/2011) (Diesel) Ivy Stacks Pump House	100 HP 74.5 kW	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0599-1-01	0599-1	Caterpillar Model 3516CHD Emergency Generator (9/3/2010) (Diesel) University Data Center	2500 ekW 3634 BHP	-	-	-	6/9/10 Permit
0627-1-01	0627-1	Kohler Model 30RZ282 Emergency Generator (<12/19/2002) (Natural Gas) Police Building	33 ekW 55 BHP	-	-	-	-
0800-1-01	0800-1	Kohler Model 150REOZJB Emergency Generator (1/1/2005) (Diesel) Copeley Child Care Center	150 ekW 251 BHP	-	-	-	-
1142-1-01	1142-1	Kohler Model 2000REOZMB Emergency Generator (11/1/2010) (Diesel) Pinn Hall	2000 ekW 2923 BHP	-	-	-	-
1142-2-01	1142-2	Onan Model 1500DFMB Emergency Generator (1993) (Diesel Fuel) Pinn Hall Addition	1500 ekW 2220 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
1142-3-01	1142-3	Generac Model 4863570100 SD230 Emergency Generator (9/1/2005) (Diesel) Pinn Hall Vivarium	230 ekW 386 BHP	-	-	-	-
1143-1-01	1143-1	Onan Model 230-0-DFM-17R- 16896 Emergency Generator (<12/19/2002) (Diesel) Primary Care Center	250 ekW 419 BHP	-	-	-	-
1146-1-01R	1146-1	Caterpillar Emergency Generator (8/11/2019) (Diesel) Emily Couric Cancer Center	500 eKW 762 BHP	-	-	-	-
1148-1-01	1148-1	Caterpillar Model SR4 Emergency Generator (8/1/1985) (Diesel) Lee Street Garage - Hospital	910 ekW 1350 BHP	-	-	-	-
1148-2-01	1148-2	Caterpillar Model SR4 Emergency Generator (8/1/1985) (Diesel) Lee St Garage - Hospital	910 ekW 1350 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
1148-3-01	1148-3	Caterpillar Model SR4 Emergency Generator (8/1/1985) (Diesel) Lee St Garage – Hospital	910 ekW 1350 BHP	-	-	-	-
1148-4-01	1148-4	Caterpillar Model SR4 Emergency Generator (8/1/1990) (Diesel) Lee St Garage – Hospital	1000 ekW 1443 BHP	-	-	-	-
1148-5-01	1148-5	Caterpillar Model SR4B Emergency Generator (8/1/2010) (Diesel) Lee St Garage – Hospital	1000 ekW 1502 BHP	-	-	-	-
1148-6-01	1148-6	Cummins Model N-495-FP Fire Pump (<12/19/2002) (Diesel) Lee St Parking Garage	113 HP 84 kW	-	-	-	-
1149-1-01	1149-1	Caterpillar Model D150-8 Emergency Generator (1/1/2008) (Diesel) 11 <sup>th</sup> St Parking Garage	150 ekW 275 BHP	-	-	-	-



Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
1149-2-01	1149-2	Caterpillar Model 3516CHD Emergency Generator (4/19/2011) (Diesel) 11 <sup>th</sup> St Garage – South Chiller	2500 ekW 3634 BHP	-	-	-	3/8/2017 Permit
1149-3-01	1149-3	Caterpillar Model 3516CHD Emergency Generator (4/20/2011) (Diesel) 11 <sup>th</sup> St Garage – South Chiller	2500 ekW 3634 BHP	-	-	-	3/8/2017 Permit
1149-4-01	1149-4	Cummins Model DQGAB-1211506 (12/7/2012) (Diesel) 11 <sup>th</sup> St Parking Garage – Battle Building	1500 ekW 2220 BHP	-	-	-	3/8/2017 Permit
1149-5-01	1149-5	Kohler Model 250REOJE (2/16/2011) (Diesel) 11 <sup>th</sup> St Garage – Connective Elements	250 ekW 385 BHP	-	-	-	-
1149-6-01	1149-6	Caterpillar Model 3512C Emergency Generator (5/2/2018) (Diesel) 11 <sup>th</sup> St Parking Garage – Hospital	1500 eKW 2206 BHP	-	-	-	3/8/2017 Permit

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
1149-7-01	1149-7	Caterpillar Model 3512C Emergency Generator (5/2/2018) (Diesel) 11 <sup>th</sup> St Parking Garage – Hospital	1500 ekW 2206 BHP	-	-	-	3/8/2017 Permit
1154-1-01	1154-1	Kohler Model 80R0ZJ Emergency Generator (1999) (Diesel) South Parking Garage	91 ekW 150 HP	-	-	-	-
1155-1-01	1155-1	Onan DFLE-4492629 Emergency Generator (<12/19/2002) (Diesel) Biomedical Eng – MR5	1500 ekW 2233 BHP	-	-	-	-
1157-1-01R	1157-1	Caterpillar Model 500 Emergency Generator (11/4/2016) Diesel MR-4	500 ekW 864 BHP	-	-	-	-
1161-1-01	1161-1	Caterpillar Model SR4B-GD Emergency Generator (8/1/2008) (Diesel) Carter-Harrison Research Building	2000 ekW 2880 BHP	-	-	-	12/20/07 Permit (Amended 3/22/10)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
1172-1-01	1172-1	Caterpillar Model LC7 Emergency Generator (7/1/2009) (Diesel) Multistory Building	600 ekW 900 BHP	-	-	-	-
1172-2-01	1172-2	Caterpillar Model SR4 Emergency Generator (<12/19/2002) (Diesel) Multistory Building	260 ekW 436 BHP	-	-	-	-
1176-2-01	1176-2	Caterpillar Model LC5 Emergency Generator (5/11/2012) (Diesel) Private Clinics - Lithotripter	250 ekW 398 BHP	-	-	-	-
1181-1-01	1181-1	Newage Model D250FPJ4 Emergency Generator (<12/19/2002) (Diesel) Medical School Building	250 ekW 419 BHP	-	-	-	-
1194-1-01	1194-1	Cummins Model DFGB Emergency Generator (7/1/2005) (Diesel) Cobb Hall	600 ekW 900 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
1196-1-01	1196-1	Onan Model 500DFFB Emergency Generator (<12/19/2002) (Diesel) Davis Transformer	500 ekW 838 BHP	-	-	-	-
1196-2-01	1196-2	Caterpillar Model D337F Emergency Generator (<12/19/2002) (Diesel) Davis Transformer	150 ekW 251 BHP	-	-	-	-
1603-5-01	1603-5	Kohler Model KD800 Emergency Generator (TBD) (Diesel) Ivy Mountain CUP	800 ekW 1195 BHP	-	-	-	-
1604-1-01	1604-1	Kohler Model 125REOZJG Emergency Generator (TBD) (Diesel) Ivy Mountain Pump House	125 ekW 197 BHP	-	-	-	-
1760-1-01	1760-1	Kohler Model 2000 REOZMB Emergency Generator (1/1/2008) (Diesel) Snyder Translational Research Building	2000 ekW 2923 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
1985-1-01	1985-1	Caterpillar Model SR4B-GD Emergency Generator (5/1/2007) (Diesel) Stacey Hall	1000 ekW 1505 BHP	-	-	-	-
1998-1-01	1998-1	Caterpillar Model SR4B Emergency Generator (5/1/2005) (Diesel) UVA Clinical Laboratory	800 ekW 1180 BHP	-	-	-	-
2150-1-01	2150-1	Caterpillar Model C13 Emergency Generator (7/1/2019) (Diesel) Bond House	350 eKW 539 BHP	-	-	-	-
2217-1-01	2217-1	Caterpillar Emergency Generator (3/4/2018) (Diesel) Hancock House	350 eKW 531 BHP	-	-	-	-
2368-1-01	2368-1	Generac Model SD200 Emergency Generator (8/1/2008) (Diesel) Kellogg House	200 ekW 297 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
2371-1-01	2371-1	Cummins Model DFEH Emergency Generator (5/1/2011) (Diesel) Ern Commons	400 ekW 755 BHP	-	-	-	-
2372-1-01	2372-1	Kohler Model 200 REOZJF Emergency Generator (2/19/2013) (Diesel) Lile-Maupin House	200 ekW 315 BHP	-	-	-	-
2373-1-01	2373-1	Kohler Model 200 REOZJF Emergency Generator (2/19/2013) (Diesel) Tuttle-Dunnington House	200 ekW 315 BHP	-	-	-	-
2374-1-01	2374-1	Kohler Model 200 REOZJF Emergency Generator (3/21/2013) (Diesel) Shannon House	200 ekW 315 BHP	-	-	-	-
2375-1-01	2375-1	Caterpillar Model D125-6 Emergency Generator (6/4/2015) (Diesel) Gibbons House	125 ekW 275 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
2382-1-01	2381-1	Caterpillar Model LC5 Emergency Generator (8/2017) (Diesel) Gooch Dillard	250 ekW 398 BHP	-	-	-	-
2464-1-01	2464-1	Olympian Model D60P3 Emergency Generator (<12/19/2002) (Diesel) Lambeth Commons ITC	60 ekW 100 BHP	-	-	-	-
2464-2-01	2464-2	Cummins Model GGMA-1209141 Emergency Generator (8/2013) (Natural Gas) WTJU	20 ekW 31.9 BHP	-	-	-	-
3708-1-01R	3708-1	Caterpillar Model LC6 Emergency Generator (3/27/2017) (Diesel) UVA Endoscopy Monroe Ln	400 ekW 601 BHP	-	-	-	-
3755-1-01	3755-1	Caterpillar Model D150-8 Emergency Generator (12/14/2011) (Diesel) Fontaine MOB 1 Neurosurgery Clinic	150 ekW 275 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
3758-1-01	3758-1	Kohler Model 150ROZJ Emergency Generator (1999) (Diesel) 560 Ray C. Hunt Drive	150 ekW 250 BHP	-	-	-	-
3759-1-01	3759-1	Olympian Model D 150 pl Emergency Generator (1/1/2004) (Diesel) 400 Ray C. Hunt Drive	150.4 ekW 251 BHP	-	-	-	-
3760-1-01	3760-1	Caterpillar Model D100-8 Emergency Generator (5/16/2017) (Diesel) 500 Ray C. Hunt Drive	100 eKW 161 BHP	-	-	-	-
3761-1-01	3761-1	Katolight Model D1000FRY4 Emergency Generator (10/1/2001) (Diesel) Aurbach Medical Building	1000 ekW 1448 BHP	-	-	-	-
5271-1-01	5271-1	Kohler Model 100ROZJ71 Emergency Generator (<12/19/2002) (Diesel) Aquatic and Fitness Center	100 ekW 165 BHP	-	-	-	-



Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
5307-1-01	5307-1	Kohler Model 80ROZJ 4SL Emergency Generator (<12/19/2002) (Diesel) Scott Stadium – west	81 ekW 134 BHP	-	-	-	-
5307-2-01	5307-2	Kohler Model 300REOZD 4UA13 Emergency Generator (<12/19/2002) (Diesel) Scott Stadium – south	300 ekW 550 BHP	-	-	-	-
5307-3-01	5307-3	Kohler Model 350REOZD Emergency Generator (<12/19/2002) (Diesel) Scott Stadium – east	355 ekW 550 BHP	-	-	-	-
5502-1-01	5502-1	Generac Model SD080 Emergency Generator (10/2/2006) (Diesel) Klockner Stadium	80 ekW 120 BHP	-	-	-	-
5506-1-01	5506-1	Kohler Model 15OZ Emergency Generator (4/5/2002) (Diesel) Baseball Stadium	15 ekW 27 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
5575-2-01	5575-2	Cummins Model DQKC-5707858 Emergency Generator (1/1/2006) (Diesel) Massie Road Heat Plant	2000 ekW 2922 BHP	-	-	-	10/13/04 Permit (Amended 3/22/10 and 7/18/13)
5577-1-01	5577-1	Caterpillar Model D50-LC2 Emergency Generator (3/2017) (Diesel) McCue Center	50 ekW 69 BHP	-	-	-	-
7103-2-01	7103-2	Caterpillar Model SR-4 Emergency Generator (10/1/1986) (Diesel) Main Heat Plant	1250 ekW 1804 BHP	-	-	-	3/12/12 Permit
7103-3-01	7103-3	Caterpillar Model SR4B Emergency Generator (7/1/2006) (Diesel) Main Heat Plant	2000 ekW 2876 BHP	-	-	-	7/5/05 Permit <sup>b</sup> (Amended 11/26/05, 10/19/07, 12/16/09, 3/22/10, 3/25/13, 5/29/15, and 8/13/19)
7147-1-01	7147-1	Caterpillar Model D150-8 Emergency Generator (2/15/2011) (Diesel) Telephone Exchange	150 ekW 275 BHP	-	-	-	-

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
7185-1-01	7185-1	Kohler 1500ROZD4 Emergency Generator (9/1/2001) (Diesel) South Chiller Plant	1500 ekW 2200 BHP	-	-	-	-
7186-1-01	7186-1	Kohler Model 100REOZJF Emergency Generator (4/15/2013) (Diesel) East Chiller Plant	100 ekW 158 BHP	-	-	-	-
7273-1-01	7273-1	Caterpillar Model C15 ATTAC Emergency Generator (4/15/2014) (Diesel) Alderman Road Pumping Station	500 ekW 865 BHP	-	-	-	-
7369-1-01R	7369-1	Generac Model G0070371 Emergency Generator (9/28/2018) (Propane) East Water Tank	16 eKW 36 BHP	-	-	-	-
7533-2-01R	7533-2	Caterpillar Model 350 Emergency Generator (5/28/2015) (Diesel) North Grounds Mech. Plant	350 ekW 713 BHP	-	-	-	-

### WOODWORKING EQUIPMENT

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0273-1-01	0273-1	FM Cabinet Shop Lacy Hall: Saw, belt sanders and other woodworking equipment	-	Nederman NFPZ 3000 Wood Dust Collector (2013)	0273- BH1	PM-10	-

### SPRAY COATING

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
0233-SCB	0233-1 & 0233-2	Col-Met Spray Booth Model ESD-14-09-26-P-SD	-	AAF International with Fiberglass Paint Arrestor	0233-1 & 0233-2	PM-10	1/3/14 Permit

### MEDICAL EQUIPMENT

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity <sup>a</sup>	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
1150-1-06	1150-1	Ethylene Oxide Sterilizer 3M Model Steri-Vac Model 5XL	0.0183 lbs/hr ETO	-	-	-	3/12/12 Permit
1150-1-07	1150-1	Ethylene Oxide Sterilizer 3M Model Steri-Vac Model 5XL	0.0183 lbs/hr ETO	-	-	-	3/12/12 Permit

<sup>a</sup> The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

<sup>b</sup> Hereafter referenced as 8/13/19 Permit.

<sup>c</sup> For electric generators, ekW is for the generator set and BHP is for the engine.

## Main Heating Plant

1. **Limitations** – Particulate matter emissions from Boiler 2R (Ref. 7103-1-02R) and Boiler 5 (Ref. 7103-1-05) shall be controlled by baghouse 7103-BH2R and 7103-BH5 when firing coal. Each baghouse shall be provided with adequate access for inspection and shall be in operation when the associated boiler is firing coal.  
(9 VAC 5-80-110, 9 VAC 5-80-1705 and Condition 2 of the 8/13/19 Permit)
2. **Limitations** – Particulate matter emissions from Boiler 1R (Ref. 7103-1-01R) shall be controlled by baghouse 7103-BH1R when firing coal. Each baghouse shall be provided with adequate access for inspection and shall be in operation when the associated boiler is firing coal.  
(9 VAC 5-80-110 and Condition 7 of the 8/13/19 Permit)
3. **Limitations** – The approved fuels for the boilers are as follows:

Emission Unit I.D.	Emission Unit Description	Approved Fuel Type
7103-1-01R	Boiler 1R	Natural Gas and Coal
7103-1-02R	Boiler 2R	Natural Gas and Coal
7103-1-03R	Boiler 3R	Natural Gas and Distillate Oil
7103-1-04R	Boiler 4R	Natural Gas and Distillate Oil
7103-1-05	Boiler 5	Natural Gas and Coal
7103-1-06	Boiler 6	Natural Gas and Distillate Oil

A change in the fuels may require a permit to modify and operate.

(9 VAC 5-80-110, 9 VAC 5-80-1705, Condition 3 of the 8/13/19 Permit, Condition 19 of the 8/13/19 Permit, and Condition 2 of the 4/3/18 Permit)

4. **Limitations** – Sulfur dioxide emissions from each boiler (Ref. 7103-1-01R, 7103-1-02R and 7103-1-05) shall be controlled by a semi-dry scrubber (7103-SB1, 7103-SB2 or 7103-SB5) when firing coal. Each scrubber shall be provided with adequate access for inspection and shall be in operation when the associated boiler is firing coal.  
(9 VAC 5-80-110 and Condition 8 of the 8/13/19 Permit)
5. **Limitations** – Nitrogen oxide emissions from each boiler (Ref. 7103-1-01R, 7103-1-02R and 7103-1-05) shall be controlled by the use of over-fire air (OFA) and flue gas recirculation (FGR) when firing coal. Each boiler shall be provided with adequate access for inspection.  
(9 VAC 5-80-110 and Condition 9 of the 8/13/19 Permit)
6. **Limitations** – Nitrogen oxide emissions from each boiler (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R, 7103-1-05, and 7103-1-06) shall be controlled by the use of low-

NO<sub>x</sub> burners and flue gas recirculation (FGR) when firing natural gas. Each boiler shall be provided with adequate access for inspection.

(9 VAC 5-80-110, Condition 10 of the 8/13/19 Permit, and Condition 1 of the 4/3/2018 Permit)

7. **Limitations** – Particulate emissions from filling the lime silo (Ref. 7103-LM1) shall be controlled by a cartridge filter. The cartridge filter shall be provided with adequate access for inspection.  
(9 VAC 5-80-110 and Condition 11 of the 8/13/19 Permit)
8. **Limitations** – Particulate emissions between the lime silo (Ref. 7103-LM1) and the scrubber shall be controlled by conveying the lime through a closed system directly into the scrubber. The conveyance apparatus shall be provided with adequate access for inspection.  
(9 VAC 5-80-110 and Condition 12 of the 8/13/19 Permit)
9. **Limitations** – Total combined annual fuel throughput for the boilers (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R and 7103-1-05) shall not exceed the following limits:

Approved Fuel Type	Quantity Allowed
Coal	50,500 tons

**OR**

Approved Fuel Type	Quantity Allowed
Natural Gas	3,240 x 10 <sup>6</sup> SCF
Distillate Oil	1,267 x 10 <sup>3</sup> gallons

Under no circumstances shall any combination of the fuel amounts result in an exceedance of the annual facility-wide emission limits established in Condition 20. Throughput of each fuel shall be calculated monthly as the sum of each consecutive 12-month period.

(9 VAC 5-80-110 and Condition 22 of the 8/13/19 Permit)

10. **Limitations** – The total distillate oil fuel throughput for the boiler (Ref. 7103-1-06) shall not exceed 3,300,000 gallons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.  
(9 VAC 5-80-110 and Condition 4 of the 4/3/18 Permit)
11. **Limitations** – The coal and distillate oil to be burned in the boilers (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R and 7103-1-05) shall meet the specifications below:

**COAL:**

Minimum heat content per shipment:	11,900 BTU/lb HHV
Minimum average annual heat content:	12,100 BTU/lb HHV
Maximum sulfur content per shipment:	1.4%

DISTILLATE OIL which meets the ASTM specification, or a DEQ-approved equivalent method, for numbers 1 or 2 fuel oil:

Minimum heat content per shipment:	132,000 BTU/gallon
Minimum average annual heat content:	134,000 BTU/gallon
Maximum sulfur content per shipment:	0.05%

(9 VAC 5-80-110 and Condition 23 of the 8/13/19 Permit)

12. **Limitations** - The distillate oil for the boiler (Ref. 7103-1-06) shall meet the ASTM D396 specification for numbers 1 or 2 fuel oil with a maximum sulfur content of 0.05% per shipment.

(9 VAC 5-80-110 and Condition 3 of the 4/3/18 Permit)

13. **Limitations** – Emissions from the boilers (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R, 7103-1-05, and 7103-1-06) shall be controlled by proper operation and maintenance. Operators for the boilers shall be trained in the proper operation of all such equipment. Training shall consist of a review and familiarization of the manufacturer's operating instructions, at minimum. The permittee shall maintain records of the required training including a statement of time, place and nature of training provided. The permittee shall have available good written operating procedures and a maintenance schedule for the boilers. These procedures shall be based on the manufacturer's recommendations, at a minimum.

(9 VAC 5-80-110, Condition 25 of the of the 8/13/19 Permit, and Condition 6 of the 4/3/18 Permit)

14. **Limitations** – Short-term emissions from the Boiler 1R (Ref. 7103-1-01R) shall not exceed any of the limits specified below:

<u>Pollutant</u>	<u>Coal</u>	<u>Natural Gas</u>
Particulate Matter (includes condensable PM for gas only)	0.02 lbs/MMBTU 1.90 lbs/hr	--- 0.71 lbs/hr
PM-10 (includes condensable PM-10 for gas only)	0.02 lbs/MMBTU 1.90 lbs/hr	--- 0.71 lbs/hr
Sulfur Dioxide	0.18 lbs/MMBTU <sup>(1)</sup> 17.10 lbs/hr <sup>(1)</sup>	--- 0.06 lbs/hr
Oxides of Nitrogen (as NO <sub>2</sub> )	0.35 lbs/MMBTU <sup>(1)</sup> 33.25 lbs/hr <sup>(1)</sup>	0.036 lbs/MMBTU <sup>(1)</sup> 3.42 lbs/hr <sup>(1)</sup>
Carbon Monoxide	19.96 lbs/hr <sup>(1)</sup>	7.82 lbs/hr <sup>(1)</sup>
Volatile Organic Compounds	0.20 lbs/hr	0.51 lbs/hr

<sup>(1)</sup> 30-day rolling average

Compliance with these emission limits may be determined as stated in Conditions 2 through 6, 9, 11, 13, 22, 23, 37 through 50, and 65.  
(9 VAC 5-80-110, 40 CFR 60.42c, 40 CFR 60.43c, and Condition 27 of the 8/13/19 Permit)

15. **Limitations** – Short-term emissions from boiler 2R (Ref. 7103-1-02R) shall not exceed any of the limits specified below:

<u>Pollutant</u>	<u>Coal</u>	<u>Natural Gas</u>
Particulate Matter (includes condensable PM for gas only)	0.02 lbs/MMBTU 1.90 lbs/hr	--- 0.71 lbs/hr
PM-10 (includes condensable PM-10 for gas only)	0.02 lbs/MMBTU 1.90 lbs/hr	--- 0.71 lbs/hr
Sulfur Dioxide	0.18 lbs/MMBTU <sup>(1)</sup> 17.10 lbs/hr <sup>(1)</sup>	--- 0.06 lbs/hr
Oxides of Nitrogen (as NO <sub>2</sub> )	0.35 lbs/MMBTU <sup>(1)</sup> 33.25 lbs/hr <sup>(1)</sup>	0.036 lbs/MMBTU <sup>(1)</sup> 3.42 lbs/hr <sup>(1)</sup>
Carbon Monoxide	19.96 lbs/hr <sup>(1)</sup>	7.82 lbs/hr <sup>(1)</sup>
Volatile Organic Compounds	0.20 lbs/hr	0.51 lbs/hr

<sup>(1)</sup> 30-day rolling average

Compliance with these emission limits may be determined as stated in Conditions 1, 3 through 6, 9, 11, 13, 22 through 50, and 65.  
(9 VAC 5-80-110, 9 VAC 5-80-1705 and Condition 4 of the 8/13/19 Permit)



16. **Limitations** – Short-term emissions from Boiler 3R (Ref. 7103-1-03R) shall not exceed any of the limits specified below:

<u>Pollutant</u>	<u>Natural Gas</u>	<u>Distillate Oil</u>
Particulate Matter (includes condensable PM)	0.84 lbs/hr	2.81 lbs/hr
PM-10 (includes condensable PM-10)	0.84 lbs/hr	1.96 lbs/hr
Sulfur Dioxide	0.07 lbs/hr	6.05 lbs/hr
Oxides of Nitrogen (as NO <sub>2</sub> )	0.03 lbs/MMBTU <sup>(1)</sup> 3.38 lbs/hr <sup>(1)</sup>	0.18 lbs/MMBTU <sup>(1)</sup> 20.45 lbs/hr <sup>(1)</sup>
Carbon Monoxide	9.26 lbs/hr <sup>(2)</sup>	4.26 lbs/hr <sup>(2)</sup>
Volatile Organic Compounds	0.61 lbs/hr	0.17 lbs/hr

<sup>(1)</sup> 30-day rolling average

<sup>(2)</sup> 8-hour rolling average

Compliance with these emission limits may be determined as stated in Conditions 3, 6, 9, 11, 13, 44 through 47, and 65.  
(9 VAC 5-80-110, 40 CFR 60.44b and Condition 28 of the 8/13/19 Permit)

17. **Limitations** – Short-term emissions from Boiler 4R (Ref. 7103-1-04R) shall not exceed any of the limits specified below:

<u>Pollutant</u>	<u>Natural Gas</u>	<u>Distillate Oil</u>
Particulate Matter (includes condensable PM)	0.84 lbs/hr	2.81 lbs/hr
PM-10 (includes condensable PM-10)	0.84 lbs/hr	1.96 lbs/hr
Sulfur Dioxide	0.07 lbs/hr	6.05 lbs/hr
Oxides of Nitrogen (as NO <sub>2</sub> )	0.03 lbs/MMBTU <sup>(1)</sup> 3.38 lbs/hr <sup>(1)</sup>	0.18 lbs/MMBTU <sup>(1)</sup> 20.45 lbs/hr <sup>(1)</sup>
Carbon Monoxide	9.26 lbs/hr <sup>(2)</sup>	4.26 lbs/hr <sup>(2)</sup>
Volatile Organic Compounds	0.61 lbs/hr	0.17 lbs/hr

<sup>(1)</sup> 30-day rolling average

<sup>(2)</sup> 8-hour rolling average

Compliance with these emission limits may be determined as stated in Conditions 3, 6, 9, 11, 13, 44 through 47, and 65.

(9 VAC 5-80-110, 40 CFR 60.44b and Condition 29 of the 8/13/19 Permit)

18. **Limitations** – Short-term emissions from Boiler 5 (Ref. 7103-1-05) shall not exceed any of the limits specified below:

<u>Pollutant</u>	<u>Coal</u>	<u>Natural Gas</u>
Particulate Matter (includes condensable PM for gas only)	0.02 lbs/MMBTU 2.25 lbs/hr	--- 0.84 lbs/hr
PM-10 (includes condensable PM-10 for gas only)	0.02 lbs/MMBTU <sup>(1)</sup> 2.25 lbs/hr	--- 0.84 lbs/hr
Sulfur Dioxide	0.18 lbs/MMBTU <sup>(1)</sup> 20.25 lbs/hr <sup>(1)</sup>	--- 0.07 lbs/hr
Oxides of Nitrogen (as NO <sub>2</sub> )	0.35 lbs/MMBTU <sup>(1)</sup> 39.38 lbs/hr <sup>(1)</sup>	0.036 lbs/MMBTU <sup>(1)</sup> 4.05 lbs/hr <sup>(1)</sup>
Carbon Monoxide	23.63 lbs/hr <sup>(1)</sup>	9.26 lbs/hr <sup>(1)</sup>
Volatile Organic Compounds	0.24 lbs/hr	0.61 lbs/hr

<sup>(1)</sup> 30-day rolling average

Compliance with these emission limits may be determined as stated in Conditions 1, 3 through 6, 9, 11, 13, 22 through 50, and 65.

(9 VAC 5-80-110, 9 VAC 5-80-1705, 40 CFR 60.43b, 40 CFR 60.44b and Condition 5 of the 8/13/19 Permit)

19. **Limitations** - Short-term emissions from the boiler (Ref. 7103-1-06) shall not exceed any of the limits specified below:

<u>Pollutant</u>	<u>Natural Gas</u>	<u>Distillate Oil</u>
Particulate Matter (filterable)	0.19 lbs/hr	1.52 lbs/hr
PM-10 (includes filterable and condensable)	0.75 lbs/hr	1.80 lbs/hr
PM-2.5	0.75 lbs/hr	1.61 lbs/hr
Oxides of Nitrogen (as NO <sub>2</sub> )	3.00 lbs/hr	15.15 lbs/hr
Carbon Monoxide	8.24 lbs/hr	3.79 lbs/hr
Sulfur Dioxide	0.29 lbs/hr	5.38 lbs/hr
Volatile Organic Compounds	0.54 lbs/hr	0.26 lbs/hr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 3, 6, 12, 13, and 66.  
(9 VAC 5-80-110 and Condition 7 of the 4/3/18 Permit)

20. **Limitations** – Total boiler (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R and 7103-1-05) emissions shall not exceed the limits specified below:

<u>Pollutant</u>	<u>Limit</u>
Particulate Matter	14.40 tons/yr
PM-10	13.77 tons/yr
Sulfur Dioxide	96.72 tons/yr
Oxides of Nitrogen (as NO <sub>2</sub> )	213.87 tons/yr
Carbon Monoxide	139.25 tons/yr
Volatile Organic Compounds	9.04 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Compliance with these emission limits may be determined as stated in Conditions 1 through 6, 9, 11, 13, 22, 23, 37 through 50, and 65.  
(9 VAC 5-80-110 and Condition 30 of the 8/13/19 Permit)

21. **Limitations** - Total emissions from the boiler (Ref. 7103-1-06) shall not exceed the limits specified below:

<u>Pollutant</u>	<u>Limit</u>
Particulate Matter (filterable)	3.71 tons/yr
PM-10 (includes filterable and condensable)	5.57 tons/yr
PM-2.5 (includes filterable and condensable)	5.16 tons/yr
Sulfur Dioxide	12.36 tons/yr
Oxides of Nitrogen (as NO <sub>2</sub> )	39.61 tons/yr
Carbon Monoxide	36.07 tons/yr
Volatile Organic Compounds	2.36 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 3, 6, 10, 12, and 13.

(9 VAC 5-80-110 and Condition 8 of the 4/3/18 Permit)

22. **Limitations** – Nitrogen oxides emissions from Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05) during coal-fire startup shall not exceed 0.35 lbs/MMBtu, as provided in Conditions 14, 15, and 18. Coal-fire startup will begin by initially firing the boiler on natural gas and then, after a sufficient warm up period to protect the boiler, will proceed directly to coal as the primary fuel. Coal-fire startup will be deemed successful when coal is added to the boiler, which must occur within five hours of initial boiler startup. In the event that circumstances preclude the addition of coal to the boiler and the boiler continues to be operated on gas beyond five hours, the startup will be considered a gas startup and will be subject to the gas-fired NO<sub>x</sub> limit of 0.036 lbs/MMBtu, as provided in Conditions 14, 15, and 18.

(9 VAC 5-80-110 and Condition 31 of the 8/13/19 Permit)

23. **Limitations** – Nitrogen oxides emissions from Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05) while simultaneously combusting coal and natural gas during fuel switching shall not exceed 0.35 lbs/MMBTU until coal is no longer fired in the boiler, as provided in Conditions 14, 15, and 18.

(9 VAC 5-80-110, 40 CFR 60.44b and Condition 32 of the 8/13/19 Permit)

24. **Limitations** – Visible emissions from the Main Heating Plant stack (Stack Ref. 7103-1) shall not exceed 20 percent opacity (six-minute average), except for one six-minute period per hour of not more than 27 percent opacity as determined by 40 CFR 60, Appendix A, Method 9 or a DEQ-approved method. This condition applies at all times except during startup, shutdown, and malfunction.

(9 VAC 5-80-110, 9 VAC 5-50-80, 40 CFR 60.43b, 40 CFR 60.43c and Condition 33 of the 8/13/19 Permit)

25. **Limitations** - Visible emissions from the boiler (Ref. 7103-1-06) shall not exceed 10 percent opacity (six-minute average) as determined by 40 CFR 60, Appendix A, Method 9 or an alternative DEQ-approved method.  
(9 VAC 5-80-110 and Condition 9 of the 4/3/18 Permit)
26. **Limitations** – Visible emissions from lime silo (Ref. 7103-LM1) shall not exceed five percent opacity as determined by 40 CFR 60, Appendix A, Method 9 or a DEQ-approved method.  
(9 VAC 5-80-110, 9 VAC 5-50-80, and Condition 35 of the 8/13/19 Permit)
27. **Limitations** – Except where this permit is more restrictive, Boilers 3R (Ref. 7103-1-03R), 4R (Ref. 7103-1-04R), and 5 (Ref. 7103-1-05) shall be operated in compliance with the requirements of 40 CFR 60, Subpart Db.  
(9 VAC 5-80-110 and Condition 36 of the 8/13/19 Permit)
28. **Limitations** – Except where this permit is more restrictive, Boilers 1R and 6 (Ref. 7103-1-01R and 7103-1-06) shall be operated in compliance with the requirements of 40 CFR 60, Subpart Dc.  
(9 VAC 5-80-110, Condition 37 of the 8/13/19 Permit, and Condition 10 of the 4/3/18 Permit)
29. **Limitations** – At all times, including periods of start-up, shutdown, soot blowing, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided, including the names of trainees, the date of training and the nature of the training.

(9 VAC 5-80-110, 9 VAC 5-50-20 E, Condition 64 of the 8/13/19 Permit, and Condition 23 of the 4/3/18 Permit)

30. **Monitoring** – Each baghouse (Ref. 7103-BH1R, 7103-BH2R or 7103-BH5) shall be equipped with a device to continuously measure the differential pressure across the

baghouse. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the associated baghouse is operating.

(9 VAC 5-80-110, 9 VAC 5-50-20C and Condition 13 of the 8/13/19 Permit)

31. **Monitoring** – Differential pressure devices for each baghouse (Ref. 7103-BH1R, 7103-BH2R, 7103-BH5) shall be equipped with audible alarms to detect operation outside of the high and low differential pressure levels suggested by the baghouse manufacturer. The alarm shall be set to sound each time the differential pressure falls outside the recommended range. Corrective action shall be taken each time the alarm is activated, such that the baghouse is returned to its recommended differential pressure range. The alarm system shall be configured and tested in accordance with approved procedures which shall include, as a minimum, common industry practices. The alarm system shall be in operation when any baghouse is operating.  
(9 VAC 5-80-110, 9 VAC 5-50-20C and Condition 14 of the 8/13/19 Permit)
32. **Monitoring** – Each scrubber (Ref. 7103-SB1R, 7103-SB2R and 7103-SB5) shall be equipped with a device to continuously measure the sorbent injection rate. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, at a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the associated scrubber is operating.  
(9 VAC 5-80-110, 9 VAC 5-50-20C and Condition 15 of the 8/13/19 Permit)
33. **Monitoring** – Sorbent injection rate devices for each scrubber (Ref. 7103-SB1R, 7103-SB2R and 7103-SB5) shall be equipped with audible alarms to detect injection rates outside of the high and low sorbent injection rates recommended by the scrubber manufacturer. The alarm shall be set to sound each time the sorbent injection rate is outside the recommended range. Corrective action shall be taken each time the alarm is activated, such that the scrubber is returned to the recommended injection rate. The alarm system shall be configured and tested in accordance with approved procedures which shall include, as a minimum, common industry practices. The alarm system shall be in operation when any scrubber is operating.  
(9 VAC 5-80-110, 9 VAC 5-50-20-C and Condition 16 of the 8/13/19 Permit)
34. **Monitoring** – The devices used to continuously measure the differential pressure across each baghouse (7103-BH1R, 7103-BH2R and 7103-BH5) shall be observed by the permittee not less than once per week of operation. If during the observation the differential pressure is not within the manufacturer's recommended range, timely corrective action shall be taken such that the baghouse resumes proper operation. The permittee shall continuously record measurements from the control equipment monitoring devices.  
(9 VAC 5-80-110 and Condition 17 of the 8/13/19 Permit)
35. **Monitoring** – The devices used to measure the sorbent injection rate for the scrubber (Ref. 7103-SB1R, 7103-SB2R and 7103-SB5) shall be observed by the permittee with a

frequency sufficient to ensure good performance of each scrubber but not less than once per week of operation. The permittee shall continuously record measurements from the control equipment monitoring devices.

(9 VAC 5-80-110 and Condition 18 of the 8/13/19 Permit)

36. **Monitoring** – The permittee shall obtain a certification from the fuel supplier with each shipment of coal and distillate oil to be burned in the boilers (Ref. 7103-1-01R, 7103-1-2R, 7103-1-03R, 7103-1-04R, 7103-1-05, and 7103-1-06). Each fuel supplier certification shall include the following:

a. Coal

- i The name of the fuel supplier;
- ii The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);
- iii The date on which the coal was shipped;
- iv The weight of coal delivered in the shipment;
- v The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and
- vi The methods used to determine the properties of the coal.

b. Distillate Oil

- i The name of the fuel supplier;
- ii The date on which the distillate oil was received;
- iii The volume of distillate oil delivered in the shipment;
- iv A statement that the distillate oil complies with the American Society for Testing and Materials specifications for numbers 1 or 2 fuel oil;
- v The sulfur content of the distillate oil;
- vi The method used to determine the sulfur content of the distillate oil for the boilers (Ref. 7103-1-03R and 7103-1-04R); and
- vii The higher heating value of the distillate oil for the boilers (Ref. 7103-1-03R and 7103-1-04R).

Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Conditions 11 and 12. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.

(9 VAC 5-80-110, 9 VAC 5-80-1200, 9 VAC 5-80-1705, 40 CFR 60.48c, Condition 24 of the 8/13/19 Permit, and Condition 5 of the 4/3/18 Permit)

37. **Monitoring** – The permittee shall install, calibrate, maintain, and operate a continuous emissions monitor system (CEMS) for measuring sulfur dioxide concentrations, moisture concentrations, and either oxygen or carbon dioxide concentrations at the outlet of each sulfur dioxide control device (Ref. 7103-SB1, 7103-SB2, 7103-SB5) when firing coal and shall record the output of the system.  
(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.46c and Condition 39 of the 8/13/19 Permit)
38. **Monitoring** – Compliance with the coal-fire sulfur dioxide emission limits for Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05) in Conditions 14, 15, and 18 is based on the average sulfur dioxide emission rates for 30 consecutive steam generating unit operating days. A separate performance test shall be completed, and a new 30-day average sulfur dioxide emission rate shall be calculated at the end of each steam generating unit operating day, to show compliance with the emission limits.  
(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.44c and Condition 40 of the 8/13/19 Permit)
39. **Monitoring** – The procedures in 40 CFR 60, Appendix A, Method 19 shall be used to determine the hourly sulfur dioxide emission rate ( $E_H$ ) and the 30-day average sulfur dioxide emission rate ( $E_A$ ) for Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05). The hourly averages used to compute the 30-day averages are obtained from the continuous emission monitoring system (CEMS). Method 19 shall be used to calculate  $E_A$  when using daily fuel sampling or 40 CFR 60, Appendix A, Method 6B.  
(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.44c and Condition 41 of the 8/13/19 Permit)
40. **Monitoring** – The permittee shall use all valid sulfur dioxide emissions data for Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05) in calculating  $E_H$  under Conditions 39, as applicable, whether or not the minimum emissions data requirements are achieved. All valid emissions data, including valid data collected during periods of startup, shutdown, and malfunction, shall be used in calculating  $E_H$ .  
(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.44c, and Condition 42 of the 8/13/19 Permit)
41. **Monitoring** – The 1-hour average sulfur dioxide emission rates for Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05) measured by a CEMS shall be expressed in lbs/MMBTU heat input and shall be used to calculate the 30-day rolling average emission rates. Each 1-hour average sulfur dioxide emission rate shall be based on at least 30 minutes of coal-fired operation and include at least two data points representing two 15-minute periods. Hourly sulfur dioxide emission rates are not calculated if the boiler



is operated on coal less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.46c, and Condition 43 of the 8/13/19 Permit)

42. **Monitoring** – The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the SO<sub>2</sub> CEMS for Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05), including:
- a. All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 (reference 40 CFR 60, Appendix B).
  - b. Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (reference 40 CFR 60, Appendix F).
  - c. The span value of the sulfur dioxide CEMS at the outlet from the control device shall be 50 percent of the maximum estimated hourly potential sulfur dioxide emission rate of the fuel combusted.

(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.46c and Condition 44 of the 8/13/19 Permit)

43. **Monitoring** – The permittee shall obtain SO<sub>2</sub> emissions data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days for Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05). If this minimum data requirement is not met with a single monitoring system, the permittee shall supplement the emissions data with data collected with other monitoring systems as approved by the DEQ.

(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.46c and Condition 45 of the 8/13/19 Permit)

44. **Monitoring** – CEMS shall be installed, calibrated, maintained, and operated to measure and record the concentration of nitrogen oxides from the boilers (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R and 7103-1-05). The NO<sub>x</sub> monitors shall be located between each boiler outlet and the Main Heating Plant stack (Stack Ref. 7103-1). Each NO<sub>x</sub> monitor shall be collocated with CO<sub>2</sub> or O<sub>2</sub> and, for the coal boilers, moisture monitors. The monitors shall be maintained, located, and calibrated in accordance with approved procedures (40 CFR 60.13).

(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.13, 40 CFR 60.48b and Condition 46 of the 8/13/19 Permit)

45. **Monitoring** – The permittee shall determine compliance with the nitrogen oxides emission standards for the boilers (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R, and 7103-1-05) in Conditions 14, 15, 16, 17, and 18 and on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is

calculated each steam generating unit operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days. (9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.46b, and Condition 47 of the 8/13/19 Permit)

46. **Monitoring** – When NO<sub>x</sub> emissions data are not obtained from the CEMS for Boilers 1R, 2R, 3R, 4R, and 5 (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R, and 7103-1-05) as a result of system breakdowns, repairs, calibration checks, and zero and span adjustments required, emissions data will be obtained by using standby monitoring systems, Method 7, Method 7A (reference 40 CFR 60, Appendix A), or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.  
(9 VAC 5-80-110, 40 CFR 60.48b and Condition 48 of the 8/13/19 Permit)
47. **Monitoring** – The span value of each CEMS/COMS for the boilers (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R, and 7103-1-05) shall be set at the following:

Monitor	Fuel Type	Span
CEMS (NO <sub>x</sub> )	Coal	1000 ppm
	Natural Gas and Oil	500 ppm
	Mixtures	1000 ppm
COMS (Opacity)	-	60%-80%

(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.48b, 40 CFR 60.47c and Condition 49 of the 8/13/19 Permit)

48. **Monitoring** - Carbon Monoxide (CO) CEMS, meeting the design specifications consistent with 40 CFR Part 63, Subpart DDDDD, shall be installed to measure and record the emissions of CO from each of the Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05) as lbs/hr. The CO monitors shall be located between each boiler outlet and the Main Heating Plant stack (Stack Ref. 7103-1) prior to mixing with the emissions from other boilers. The CEMS shall be installed, calibrated, maintained, audited and operated in accordance with DEQ approved procedures which are equivalent to the requirements of 40 CFR Part 63, Subpart DDDDD. Data shall be reduced to 30 day rolling averages using procedures approved by the DEQ.  
(9 VAC 5-80-110 and Condition 50 of the 8/13/19 Permit)
49. **Monitoring** - Performance evaluations of the CO CEMS for the boilers (Ref. 7103-1-01R, 7103-1-02R, and 7103-1-05) shall be conducted in accordance with 40 CFR Part 63, Subpart DDDDD, and shall take place during the performance tests under 9 VAC 5-50-30 or within 30 days thereafter. One copy of the performance evaluations report shall be submitted to the DEQ within 45 days of the evaluation. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation and calibration of the device. A 30 day notification, prior to the demonstration of continuous monitoring system's performance,

and subsequent notifications shall be submitted to the DEQ.  
(9 VAC 5-80-110 and Condition 51 of the 8/13/19 Permit)

50. **Monitoring – CEMS: Carbon Monoxide** - A CEMS quality control program which is equivalent to the requirements of 40 CFR Part 63, Subpart DDDDD shall be implemented for the CO continuous monitoring systems for the boilers (Ref. 7103-1-01R, 7103-1-02R, and 7103-1-05)  
(9 VAC 5-80-110 and Condition 52 of the 8/13/19 Permit)
51. **Monitoring** – A continuous opacity monitor system (COMS) shall be installed to measure and record opacity from the Main Heating Plant stack (Stack Ref. 7103-1). The COMS shall monitor and record the opacity of a representative portion of the gases discharged into the atmosphere. The monitor shall be maintained, located, and calibrated in accordance with approved procedures.  
(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.13, 40 CFR 60.43b, 40 CFR 60.48b, 40 CFR 60.43c, 40 CFR 60.47c and Condition 53 of the 8/13/19 Permit)
52. **Monitoring** – The permittee shall check the zero (or low-level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts of the COMS for the Main Heating Plant stack (Stack Ref. 7103-1) at least once daily in accordance with a written procedure. The zero and span shall, as a minimum, be adjusted whenever the 24-hour zero drift or 24-hour span drift exceeds two times the limits of the applicable performance specifications in Appendix B of 40 CFR 60. The COMS shall allow the amount of excess zero and span drift measured at the 24-hour checks to be recorded and quantified, whenever specified. The optical surfaces exposed to effluent gases shall be cleaned prior to performing the zero and span drift adjustments except for systems using automatic zero adjustments. The optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds four percent opacity.  
(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.13(d)(1) and Condition 54 of the 8/13/19 Permit)
53. **Monitoring** – The permittee shall develop procedures for the Main Heating Plant stack (Stack Ref. 7103-1) COMS, including a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique, to produce a known obstruction of the light beam. Such procedures shall provide a system check of the analyzer's internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.  
(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.13(d)(2) and Condition 55 of the 8/13/19 Permit)
54. **Monitoring** – Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required, the COMS for the Main Heating Plant stack (Stack Ref. 7103-1), shall be in continuous operation and shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive six-minute period.  
(9 VAC 5-80-110, 9 VAC 5-50-40, 9 VAC 5-80-1200, 40 CFR 60.13(e)(1) and Condition 56 of the 8/13/19 Permit)

55. **Recordkeeping** – The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. The daily throughput of coal (tons), natural gas (million cubic feet), distillate oil (gallons) and fuel heat input (MMBTU/hr) for each fuel as applicable for each boiler (Ref. 7103-1-01R, 7103-1-03R, 7103-1-04R and 7103-1-05).
  - b. The monthly and annual throughput of coal (tons), natural gas (million cubic feet), distillate oil (gallons), and fuel heat input (MMBTU/hr) for each fuel as applicable for each boiler (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R, and 7103-1-05) and summed for the boilers combined.
  - c. The monthly and annual throughputs of natural gas (million cubic feet), distillate oil (gallons) and fuel heat input (MMBTU) for each fuel as applicable for the boiler (Ref. 7103-1-06). The annual throughputs shall be calculated monthly as the sum of each consecutive 12-month period.
  - d. Annual particulate matter, PM-10, sulfur dioxide, nitrogen oxides (as NO<sub>2</sub>), VOC and carbon monoxide emissions (in tons) for each boiler (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R and 7103-1-05) and summed for the boilers combined, using calculation methods approved by the DEQ, as provided in Attachment C.
  - e. Emissions calculations sufficient to verify compliance with the annual emission limitations for Boiler 6 (Ref. 7103-1-06) in Condition 21, calculated monthly as the sum of each consecutive 12-month period, using calculation methods approved by the DEQ.
  - f. All fuel supplier certifications for the boilers.
  - g. A log of weekly scrubber and baghouse inspection results including:
    - i The date, time, and name of person performing each inspection;
    - ii The sorbent injection rate and the differential pressure across the baghouse; and
    - iii Any maintenance or repairs performed as a result of these inspections.
  - h. Manufacturer specifications showing the maximum design heat input capacity of Boiler 6 (Ref. 7103-1-06) for each distillate oil and natural gas.
  - i. Records of the required boiler operator training including a statement of time, place and nature of training provided.
  - j. Manufacturer's recommendations for control device operation.
  - k. COMS calibrations and calibration checks, percent operating time, and excess emissions.
  - l. Results of all stack tests and visible emissions evaluations.

m. Records for Boilers 1R, 2R, 3R, 4R and 5 (Ref. 7103-1-01R, 7103-1-02R, 7103-1-03R, 7103-1-04R and 7103-1-05) that include the following:

- i Calendar date.
- ii The monthly and annual capacity factor for each fuel burned in each boiler (Boilers 3R, 4R, and 5); annual capacity shall be calculated on a 12-month rolling average basis. The annual capacity factor is determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of coal by the potential heat input to the steam generating unit if the steam generating unit had been operated for 8,760 hours at the maximum design heat input capacity.
- iii The average hourly sulfur dioxide emission rate (Boiler 1R) and nitrogen oxides emission rates (expressed as NO<sub>2</sub>) (Boilers 2R, 3R, 4R and 5) in lbs/MMBTU heat input measured or predicted recorded daily.
- iv The sulfur dioxide emission rate (Boilers 1R, 2R and 5) and nitrogen oxides emission rates (expressed as NO<sub>2</sub>) (Boilers 1R, 2R, 3R, 4R and 5) in lbs/MMBTU heat input calculated at the end of each steam generating unit operating day from the measured or predicted hourly emission rates for the preceding 30 steam generating unit operating days. This data shall be used to demonstrate compliance with the individual and mixed fuel limitations.
- v Identification of the steam generating unit operating days when the calculated 30-day average oxides of nitrogen emission rate or sulfur dioxide emission rate is in excess of the applicable emissions standards, with the reasons for such excess emissions as well as a description of corrective actions taken.
- vi Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.
- vii Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal was not combusted in the steam generating unit.
- viii Identification of any times when the pollutant concentration exceeded full span of the continuous emissions monitoring system.
- ix Description of any modifications to the CEMS that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3.
- x Results of daily sulfur dioxide and nitrogen oxides calibration drift tests and quarterly accuracy assessments as required under 40 CFR 60, Appendix F, Procedure 1.

n. The DEQ-approved, pollutant-specific emission factors and the equations used to demonstrate compliance with emission limits, as provided in Attachment C.

- o. A log of each fuel switch including the duration (in minutes) for Boiler 1R (Ref. 7103-1-01R), Boiler 2R (Ref. 7103-1-02R) and Boiler 5 (Ref. 7103-1-05). The details of the log shall be arranged with the DEQ.
- p. All opacity data.
- q. A log of each coal-fire startup on Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05). The details of the log shall be arranged with the DEQ.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110, 9 VAC 5-50-50, 40 CFR 64.9, 40 CFR 60.48c, 40 CFR 60.49b, Condition 61 of the 8/13/19 Permit, and Condition 18 of the 4/3/18 Permit)

- 56. **Compliance Assurance Monitoring (CAM)** – For Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05) the permittee shall conduct monitoring as specified in the respective Compliance Assurance Monitoring (CAM) Plans (Attachment A).  
(9 VAC 5-80-110 and 40 CFR 64.6(c))
- 57. **CAM** – The permittee shall conduct the monitoring and fulfill the other obligations specified in 40 CFR 64.7 through 40 CFR 64.9.  
(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.6 (c))
- 58. **CAM** – At all times, the permittee shall maintain the monitoring equipment, including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.  
(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (b))
- 59. **CAM** – Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05) are operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of compliance assurance monitoring, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by inadequate maintenance or improper operation are not malfunctions.  
(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (c))
- 60. **CAM** – Upon detecting an excursion or exceedance, the permittee shall restore operation of Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05) (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of

any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup and shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (d)(1))

61. **Monitoring and Recordkeeping – CAM** – Determination that acceptable procedures were used in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (d)(2))

62. **Monitoring and Recordkeeping – CAM** – If the exceedances or excursions associated with CAM plan monitoring exceed five percent of the operating time for Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05) for a semiannual reporting period, the permittee shall develop, implement and maintain a Quality Improvement Plan (QIP) in accordance with 40 CFR 64.8. If a QIP is required, the permittee shall have it available for inspection. The QIP initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the permittee shall modify the plan to include procedures for conducting one or more of the following, as appropriate:

- a. Improved preventative maintenance practices;
- b. Process operation changes;
- c. Appropriate improvements to control methods;
- d. Other steps appropriate to correct control performance; and
- e. More frequent or improved monitoring.

(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.8 (a) and (b))

63. **CAM** – The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan (QIP) required pursuant to §64.8 and any activities undertaken to implement a QIP, and other supporting information required to be maintained under 40 CFR 64 (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).

(9 VAC 5-80-110 E and 40 CFR 64.9 (b))

64. **Testing** – The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. This includes constructing

the facility such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and providing stack or duct that is free from cyclonic flow. Test ports shall be provided in accordance with the applicable performance specification (reference 40 CFR Part 60, Appendix B).

(9 VAC 5-80-110, 9 VAC 5-50-30 F, 9 VAC 5-80-1705, Condition 6 of the 5/29/15 Permit, and Condition 11 of the 4/3/18 Permit)

65. **Testing** – Upon request by the DEQ, and in no case less frequent than once every five years, the permittee shall perform additional performance tests for the following pollutants using the specified fuels and methods:

Emission Unit	Pollutant	Fuel	Test Method
Boilers 1R, 2R & 5	PM/PM-10 <sup>(1)</sup>	Coal	40 CFR 60, Appendix A, Methods 5, 5B or 17 and 19, and 40 CFR 51, Appendix M, Method 202
Boilers 3R and 4R	CO	Natural Gas and Distillate Oil	40 CFR 60, Appendix A, Method 10

- <sup>(1)</sup> All particulate matter shall be considered PM-10. Condensables shall be tested separately for each boiler.

Tests shall be conducted to determine compliance with the applicable emission limits contained in Conditions 14, 15, 16, 17, and 18. The details of the tests are to be arranged with the DEQ.

(9 VAC 5-80-110, 9 VAC 5-50-30 G and Condition 59 of the 8/13/19 Permit)

66. **Testing** - Initial performance tests shall be conducted on Boiler 6 (Ref. 7103-1-06) for nitrogen oxides using approved test methods. Tests shall be conducted to determine compliance with the applicable emission limits contained in Condition 19. The tests shall be performed, reported, and demonstrate compliance as described below:

- a. Performance testing on natural gas firing:

The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated but in no event later than 180 days after start-up of the permitted unit. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410.

- b. Performance testing on distillate fuel oil firing:

Upon the first instance of firing distillate fuel oil, the tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated but in no event later than 180 days after the first instance of firing distillate fuel oil. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410.



The details of the tests are to be arranged with the DEQ. The permittee shall submit a test protocol at least 30 days prior to testing. Samples taken as required by this permit shall be analyzed in accordance with 1 VAC 30-45, Certification for Noncommercial Environmental Laboratories, or 1 VAC 30-46, Accreditation for Commercial Environmental Laboratories. One copy of the test results shall be submitted to the DEQ within 45 days after the completion of each test, and shall conform to the test report format enclosed with this permit.

(9 VAC 5-80-110, 9 VAC 5-50-30 G and Condition 13 of the 4/3/18 Permit)

67. **Testing** – Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall also be conducted by the permittee on Boiler 6 (Ref. 7103-1-06). The tests shall be performed, reported, and demonstrate compliance as described below:

a. Natural gas firing:

The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated but in no event later than 180 days after start-up of the permitted unit. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410.

b. Distillate fuel oil firing:

Upon the first instance of firing distillate fuel oil, the tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated but in no event later than 180 days after first instance of firing distillate fuel oil.

Each test shall consist of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. The observation period may be reduced from 30 sets to 10 sets if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation. The details of the tests are to be arranged with the DEQ. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test result shall be submitted to the DEQ within 60 days after test completion and shall conform to the test report format enclosed with this permit.

(9 VAC 5-80-110, 9 VAC 5-50-30 G and Condition 14 of the 4/3/18 Permit)

68. **Testing** – As required by 40 CFR Part 60, Subpart Dc, section 60.47c(a), the permittee shall conduct additional Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9 or Method 22 on Boiler 6 (Ref. 7103-1-06) while firing distillate oil in accordance with the timeline established in 40 CFR 60.47c (a).  
(9 VAC 5-80-110, 9 VAC 5-50-30 G and Condition 17 of the 4/3/18 Permit)

69. **Testing** – Upon request by the DEQ, the permittee shall conduct additional visible emission evaluations from the main heating plant stack (Stack Ref. 7103-1) or the lime silo (Ref. 7103-LM1) to demonstrate compliance with the visible emission limits contained in the permit. The details of the tests shall be arranged with the DEQ.  
(9 VAC 5-80-110, 9 VAC 5-50-30 G and Condition 60 of the 8/13/19 Permit)

70. **Testing** - Upon request by the DEQ, the permittee shall conduct additional performance tests from Boiler 6 (Ref. 7103-1-06), to demonstrate compliance with the emission limits contained in this permit.  
(9 VAC 5-80-110 and Condition 15 of the 4/3/18 Permit)
71. **Testing** - Upon request by the DEQ, the permittee shall conduct performance tests to demonstrate the maximum design heat input capacity of Boiler 6 (Ref. 7103-1-06). The details of the tests shall be arranged with the DEQ  
(9 VAC 5-80-110, 9 VAC 5-50-30 G, and Condition 16 of the 4/3/18 Permit)
72. **Reporting** – The permittee shall submit reports to the DEQ, within 30 days after the end of each semi-annual period, ending **June 30** and **December 31**, for Boilers 1R (Ref. 7103-1-01R), 3R (Ref. 7103-1-03R), 4R (Ref. 7103-1-04R), 5 (Ref. 7103-1-05), and 6 (Ref. 7103-1-06). If no shipments of coal or distillate oil were received during the semi-annual period, the semi-annual report shall include a statement that no coal or oil was received during the semi-annual period and the information contained in Part c of this condition. If coal or distillate oil was received during the semi-annual period, the reports shall include:
- a. Calendar dates covered in the reporting period,
  - b. A signed statement from the owner or operator of the facility that all of the coal and distillate oil burned or received at the facility met the requirements of Condition 11 or 12, as applicable, that the facility maintains copies of the fuel certifications required in Condition 36, and that the fuel supplier certifications represent all of the coal and distillate oil burned or received at the facility (copies of all fuel supplier certifications for all shipments of coal and distillate oil may be requested at any time by DEQ), and
  - c. The information contained in Condition 55.m as it applies to Boilers 1R, 3R, 4R, and 5, and excluding CO CEMS requirements.
  - d. Excess emissions for NO<sub>x</sub> and SO<sub>2</sub> CEMS, and COM, as applicable, to include:
    - i. The magnitude of excess emissions, any conversion factors used in the calculation of excess emissions, and the date and time of commencement and completion of each period of excess emissions;
    - ii. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the process, the nature and cause of the malfunction (if known), the corrective action taken or preventative measures adopted;
    - iii. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks, and the nature of the system repairs or adjustments; and
    - iv. When no excess emissions have occurred or the continuous monitoring systems have not been inoperative, repaired or adjusted, such information shall be stated in that report.

One copy of the semi-annual report shall be submitted to the U.S. Environmental Protection Agency at the address specified below:

Chief, Air Section  
Enforcement & Compliance Assurance Division  
Air, RCRA and Toxics Branch  
US EPA Region 3  
1650 Arch Street – 3ED21  
Philadelphia, PA 19103

(9 VAC 5-80-110, 9 VAC 5-50-50, 40 CFR 60.48c, 40 CFR 60.49b, Condition 57 of the 8/13/19 Permit, and Condition 12 of the 4/3/18 Permit)

73. **Reporting** – The permittee shall submit reports to the DEQ, within 30 days after the end of each semi-annual period, ending **June 30** and **December 31**, for Boilers 1R (Ref. 7103-1-01R), 2R (Ref. 7103-1-02R), and 5 (Ref. 7103-1-05). The reports shall include:
- a. Calendar dates covered in the reporting period,
  - b. Excess emissions for the CO CEMS to include:
    - i The magnitude of excess emissions, any conversion factors used in the calculation of excess emissions, and the date and time of commencement and completion of each period of excess emissions;
    - ii Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the process, the nature and cause of the malfunction (if known), the corrective action taken or preventative measures adopted;
    - iii The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and
    - iv When no excess emissions have occurred or the continuous monitoring systems have not been inoperative, repaired or adjusted, such information shall be stated in that report.

The required elements of this report may be satisfied through reports required by 40 CFR Part 63, Subpart DDDDD.  
(9 VAC 5-80-110 and Condition 58 of the 8/13/19 Permit)

74. **Reporting – Compliance Assurance Monitoring (CAM)** – If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the DEQ and, if necessary, submit a proposed modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the

frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

(9 VAC 5-80-110 E (Article 1) and 40 CFR 64.7 (e))

## Coal and Ash Handling System

75. **Limitations** – Particulate matter emissions from each coal silo (7103-CS1, 7103-CS2, 7103-CS3, and 7103-CS4) and bunker (B1, B2 and B5) shall be controlled by cartridge filters. The cartridge filters shall be provided with adequate access for inspection and shall be in operation when the coal handling equipment is operating.  
(9 VAC 5-80-110 and Condition 2 of the 7/23/07 Permit as amended 4/9/09)
76. **Limitations** – Particulate matter emissions from the fly ash silo (FAS) and bottom ash silo (BAS) shall be controlled by fabric filters. The fabric filters shall be provided with adequate access for inspection and shall be in operation when the ash handling equipment is operating.  
(9 VAC 5-80-110 and Condition 3 of the 7/23/07 Permit as amended 4/9/09)
77. **Limitations** – Particulate matter emissions from the crusher (CR1) and crusher screen (CCS1) shall be controlled by cartridge filters. The cartridge filters shall be provided with adequate access for inspection and shall be in operation when the coal handling equipment is operating.  
(9 VAC 5-80-110 and Condition 4 of the 7/23/07 Permit as amended 4/9/09)
78. **Limitations** – Particulate matter emissions from coal unloading of railcars (GS1-8, H1A, H1B, H2A, H2B, H3A, H3B, H4A, and H4B) will be controlled by enclosing the area with a metal building.  
(9 VAC 5-80-110 and Condition 5 of the 7/23/07 Permit as amended 4/9/09)
79. **Limitations** – Fugitive dust emission controls for the coal and ash handling equipment operations shall include the following, or equivalent, as a minimum:
- a. Dust from material handling, screens, load-outs and traffic areas shall be controlled by wet suppression or equivalent (as approved by the DEQ).
  - b. All material being stockpiled shall be kept adequately moist to control dust during storage and handling or covered at all times to minimize emissions.
  - c. Dust from haul roads and traffic areas shall be controlled by application of asphalt, water, suitable chemicals or equivalent methods approved by the DEQ.
  - d. Reasonable precautions shall be taken to prevent deposition of dirt on public roads and subsequent dust emissions. Dirt, product or raw material spilled or tracked onto paved surfaces, shall be promptly removed to prevent particulate matter from becoming airborne.
- (9 VAC 5-80-110, 9 VAC 5-50-90 and Condition 6 of the 7/23/07 Permit as amended 4/9/09)

80. **Limitations** – All coal bunkers (B1, B2 and B5) and the coal conveying equipment (C1-12, E1-4, CCS1 and CR1) shall be completely enclosed.  
(9 VAC 5-80-110 and Condition 7 of the 7/23/07 Permit as amended 4/9/09)
81. **Limitations** – The unloading of coal by truck shall only occur during emergencies. Emergency truck unloading will only take place when the normal rail unloading is not operational.  
(9 VAC 5-80-110 and Condition 8 of the 7/23/07 Permit as amended 4/9/09)
82. **Limitations** – The throughput of coal shall not exceed 50,500 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.  
(9 VAC 5-80-110 and Condition 14 of the 7/23/07 Permit as amended 4/9/09)
83. **Limitations** – Emissions from the operation of the coal and ash handling equipment shall not exceed the limits specified below:

Particulate Matter (PM)	1.17 lbs/hr	1.79 tons/yr
PM-10	0.68 lbs/hr	1.71 tons/yr

These emission limits are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition 82.

(9 VAC 5-80-110 and Condition 16 of the 7/23/07 Permit as amended 4/9/09)

84. **Limitations** – Visible emissions from each filter stack and coal handling equipment operations shall not exceed 10 percent opacity as determined by 40 CFR 60, Appendix A, Method 9.  
(9 VAC 5-80-110, 9 VAC 5-50-80 and Condition 17 of the 7/23/07 Permit as amended 4/9/09)
85. **Limitations** – Except where this permit is more restrictive, the NSPS equipment shall be operated in compliance with the requirements of 40 CFR 60, Subpart Y.  
(9 VAC 5-80-110, 5-50-410 and Condition 15 of the 7/23/07 Permit as amended 4/9/09)
86. **Limitations** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

(9 VAC 5-80-110, 9 VAC 5-50-20 E and Condition 23 of the 7/23/07 Permit as amended 4/9/09)

87. **Monitoring** – Each of the cartridge and fabric filters shall be equipped with a device to continuously measure the differential pressure across the filters. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when each filter is operating.

(9 VAC 5-80-110 and Condition 9 of the 7/23/07 Permit as amended 4/9/09)

88. **Monitoring** – To ensure good performance, the devices used to continuously measure the differential pressure across each cartridge and/or fabric filter shall be observed by the permittee not less than once per week of operation. The permittee shall continuously record measurements from the control equipment monitoring devices. If during the inspection, the differential pressure is not within the manufacturer's recommended range, timely corrective action shall be taken such that the cartridge or fabric filter resumes proper operation.

(9 VAC 5-80-110 and Condition 10 of the 7/23/07 Permit as amended 4/9/09)

89. **Monitoring** – The permittee shall conduct a weekly visible emissions inspection of each cartridge and fabric filter exhaust. All visible emissions inspections shall be performed when the equipment is operating. Each observation period shall be a minimum of one minute. If during the inspection visible emissions are observed, a visible emission evaluation (VEE) shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9, unless timely corrective action is taken within two hours of the visible emission inspection such that the equipment operates with no visible emissions within 24 hours of the initial observation. The VEE shall be conducted for a minimum of six minutes. If any of the observations exceed the applicable opacity standard for the emissions unit, the VEE shall be conducted for a total of 60 minutes or until an exceedance of the opacity standard for that emission unit has been documented, whichever period is shorter.

(9 VAC 5-80-110, 9 VAC 5-50-50 H and Condition 11 of the 7/23/07 Permit as amended 4/9/09)

90. **Monitoring** – The permittee shall perform the following inspection and maintenance activities for coal handling equipment operations:
- a. The permittee shall inspect and maintain weekly the fugitive dust emissions control system used to control fugitive emissions from coal handling activities
  - b. The permittee shall perform a weekly visual survey of the coal handling activities for any sources of excessive fugitive emissions. For the purpose of this survey, excessive emissions are considered to be any visible emissions that leave the plant site boundaries. The person conducting this survey does not have to be Method 9 certified. However, the individual should be familiar with the procedures of Method 9 including using the proper location to observe visible emissions. If sources of excess fugitive emissions are identified during the survey, corrective action shall be initiated to minimize the fugitive emissions as soon as practical.

(9 VAC 5-80-110, 9 VAC 5-50-50 H and Condition 12 of the 7/23/07 Permit as amended 4/9/09)

91. **Recordkeeping** – The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. Monthly and annual throughput of coal, as required by Condition 68.
  - b. A log of weekly cartridge and fabric filter inspections results including:
    - i The date, time, and name of person performing each inspection;
    - ii The differential pressure across each cartridge and/or fabric filter; and
    - iii Any maintenance or repairs performed as a result of these inspections including the date, time and person performing the repairs.
  - c. A log of weekly visible emissions inspections for the cartridge and/or fabric filter exhausts and coal handling operations, including:
    - i The date, time, and name of person performing each inspection;
    - ii Whether or not there were visible emissions; and
    - iii Any maintenance or repairs performed as a result of these inspections including the date, time and person performing the repairs.
  - d. Records of the required training and certification for operators of the air pollution control equipment. Certification of training shall consist of a statement of time, place, and nature of training provided.



e. Results of all visible emissions evaluations.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110, 9 VAC 5-50-50 and Condition 19 of the 7/23/07 Permit as amended 4/9/09)

92. **Testing** – The coal and ash handling equipment shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Safe sampling ports, platforms, and access shall be provided at appropriate locations when requested.  
(9 VAC 5-80-110, 9 VAC 5-50-30 F and Condition 13 of the 7/23/07 Permit as amended 4/9/09)
93. **Testing** – Upon request by the DEQ, the permittee shall conduct additional visible emissions evaluations (VEE) to demonstrate compliance with the visible emission limits contained in this permit. The details of the tests shall be arranged with the DEQ.  
(9 VAC 5-80-110, 9 VAC 5-50-30 G and Condition 18 of the 7/23/07 Permit as amended 4/9/09)
94. **Reporting** – The permittee shall furnish notification to the DEQ of the intention to unload coal by truck at least 24 hours prior to the unloading event.  
(9 VAC 5-80-110, 9 VAC 5-50-50 and Condition 20 of the 7/23/07 Permit as amended 4/9/09)

## Other Fuel Burning Equipment

95. **Limitations** – The approved fuels for the boilers are as follows:

<b>Emission Unit I.D.</b>	<b>Emission Unit Description</b>	<b>Approved Fuel Type</b>
0215-2-01	Fulton Model VMP-40 (CAS Building)	Natural Gas
0261-1-01	Cleaver Brooks (Shelburne Hall)	Natural Gas
0321-1-01R	Smith Cast Iron Model 19HE-09 (Aerospace Research Lab)	Natural Gas
0550-1-01	TELEDYNE LAARS (Saunders Hall)	Natural Gas
0550-1-02	TELEDYNE LAARS (Saunders Hall)	Natural Gas
0550-1-03	TELEDYNE LAARS (Saunders Hall)	Natural Gas
0580-2-01R	Hydrotherm (Carruthers Hall)	Natural Gas
0595-1-01	Cleaver Brooks (Fontana Food Center)	Natural Gas
0603-1-01R	Hydrotherm (Faulkner House)	Natural Gas
1603-1-01	Fulton Model VTG-4000DF (Ivy Mountain CUP)	Natural Gas and Distillate Oil
1603-2-01	Fulton Model VTG-4000DF (Ivy Mountain CUP)	Natural Gas and Distillate Oil
1603-3-01	Fulton Model VTG-4000DF (Ivy Mountain CUP)	Natural Gas and Distillate Oil
1760-2-01	Cleaver Brooks (Sheridan G Snyder Building)	Natural Gas
1760-2-02	Cleaver Brooks (Sheridan G Snyder Building)	Natural Gas
1760-3-01	Fulton Model VMP-150 (Sheridan G. Snyder Building)	Natural Gas
1760-3-02	Fulton Model VMP-150 (Sheridan G. Snyder Building)	Natural Gas
1985-2-01	Peerless Model LCE-13-W/S (Stacey Hall)	Natural Gas
1985-2-02	Peerless Model LCE-13-W/S (Stacey Hall)	Natural Gas
1991-1-01	Cleaver Brooks (Battle Building)	Natural Gas
2566-1-01	Buderus Logano (Mitchell Apartments)	Natural Gas

<b>Emission Unit I.D.</b>	<b>Emission Unit Description</b>	<b>Approved Fuel Type</b>
3708-2-01	Lattner Model WLF (UVA Outpatient Surgery)	Natural Gas
3761-2-01	York-Shipley (Aurbach Medical Building)	Natural Gas
3761-2-02	York-Shipley (Aurbach Medical Building)	Natural Gas
3761-3-01	York-Shipley (Aurbach Medical Building)	Natural Gas
3761-3-02	York-Shipley (Aurbach Medical Building)	Natural Gas
5562-1-01	Fulton (NGRC Addition)	Natural Gas
5562-2-01	Fulton (NGRC Addition)	Natural Gas
5562-3-01	Lochinvar (NGRC Addition)	Natural Gas
5575-1-01	Unilux (Massie Road Heat Plant)	Natural Gas and Distillate Oil
5575-1-02	Unilux (Massie Road Heat Plant)	Natural Gas and Distillate Oil
5575-1-03	Unilux (Massie Road Heat Plant)	Natural Gas and Distillate Oil
5575-1-04	Unilux (Massie Road Heat Plant)	Natural Gas and Distillate Oil
5575-3-01	Unilux (Massie Road Heat Plant)	Natural Gas
5575-3-02	Unilux (Massie Road Heat Plant)	Natural Gas
7533-3-01	Fulton (North Grounds Heat Plant)	Natural Gas and Distillate Oil
7533-4-01	Fulton (North Grounds Heat Plant)	Natural Gas and Distillate Oil
7533-5-01	Fulton (North Grounds Heat Plant)	Natural Gas and Distillate Oil
7533-6-01	Boiler (North Grounds Mechanical Plant)	Natural Gas and Distillate Oil
7533-7-01	Boiler (North Grounds Mechanical Plant)	Natural Gas and Distillate Oil

A change in the fuels may require a permit to modify and operate.  
(9 VAC 5-80-110, and Condition 2 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)

96. **Limitations** – The total distillate oil fuel throughput for the four Unilux Bent Water Tube boilers (Ref. 5575-1-01 through 5575-1-04) shall not exceed more than 450,000 gallons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. There is no fuel throughput limitation for the use of natural gas.  
(9 VAC 5-80-110 and Condition 5 of 10/13/04 Permit as amended 3/22/10 and 7/18/13)
97. **Limitations** – The distillate oil for the four Unilux Bent Water Tube boilers (Ref. 5575-1-01 through 5575-1-04) shall meet ASTM specifications for numbers 1 or 2 fuel oil and shall not exceed 0.05% sulfur content per shipment. The distillate oil for the fuel burning equipment listed in Condition 95, excluding the four Unilux Bent Water Tube boilers (Ref. 5575-1-01 through 5575-1-04), shall meet ASTM specifications for numbers 1 or 2 fuel oil and shall not exceed 0.5% sulfur content per shipment.  
(9 VAC 5-80-110, and Condition 6 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)
98. **Limitations** – Boiler emissions shall be controlled by proper operation and maintenance. Boiler operators shall be trained in the proper operation of all such equipment. Training shall consist of a review and familiarization with the manufacturer's operating instructions, at minimum.  
(9 VAC 5-80-110 and Condition 8 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)
99. **Limitations** – Emissions from the Unilux Bent Water Tube Boilers (Ref. 5575-1-01 through 5575-1-04) shall not exceed the limits specified below:

Pollutant	Each Boiler	Combined (all 4 boilers)
Particulate Matter (filterable)	0.14 lbs/hr	0.71 tons/yr
PM-10 (total)	0.17 lbs/hr	1.58 tons/yr
PM-2.5 (total)	0.15 lbs/hr	1.53 tons/yr
Sulfur Dioxide	0.51 lbs/hr	1.68 tons/yr
Nitrogen Oxides	1.08 lbs/hr	10.26 tons/yr
Carbon Monoxide	0.80 lbs/hr	14.09 tons/yr
Volatile Organic Compounds	0.05 lbs/hr	0.92 tons/yr

Compliance with these emission limits may be determined as stated in Conditions 95, 96, 97, and 98.  
(9 VAC 5-80-110 and Condition 10 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)

100. **Limitations** – Visible emissions from the boiler stack (Stack Ref. 5575-1) shall not exceed 10 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity as determined by 40 CFR 60, Appendix A, Method 9. This condition applies at all times except during startup, shutdown, and malfunction.  
(9 VAC 5-80-110 and Condition 12 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)

101. **Limitations** – Except where this permit is more restrictive, the NSPS equipment (Ref. 1760-2-01 and 1760-2-02), shall be operated in compliance with the requirements of 40 CFR 60, Subpart Dc.  
(9 VAC 5-80-110, 9 VAC 5-50-400, and 9 VAC 5-50-410)

102. **Limitations** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment, monitoring devices, and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided, including the names of trainees, the date of training and the nature of the training.

(9 VAC 5-80-110, 9 VAC 5-50-20 E and Condition 21 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)

103. **Monitoring** – The permittee shall maintain records of the required training including a statement of time, place and nature of training provided for the boilers. The permittee shall have available good written operating procedures and a maintenance schedule for the boilers. These procedures shall be based on the manufacturer's recommendations, at minimum. All records required by this condition shall be kept on site and made available for inspection by the DEQ.  
(9 VAC 5-80-110 and Condition 8 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)

104. **Monitoring** – The permittee shall obtain a certification from the fuel supplier with each shipment of distillate oil to be burned in each boiler. Each fuel supplier certification shall include the following:

- a. The name of the fuel supplier;
- b. The date on which the distillate oil was received;
- c. The volume of distillate oil delivered in the shipment;
- d. A statement that the distillate oil complies with the ASTM specifications for numbers 1 or 2 fuel oil for boilers listed in Condition 97;
- e. The sulfur content of the distillate oil; and
- f. The method used to determine the sulfur content of the distillate oil.

(9 VAC 5-80-110, 40 CFR 60 Subpart Dc, and Condition 7 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)

105. **Recordkeeping** – The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:

- a. Monthly and annual throughputs of natural gas (in cubic feet) and distillate oil (in gallons) to the four Unilux Bent Water Tube boilers combined (Ref. 5575-1-01 through 5575-1-04). Annual throughputs for each fuel shall be calculated monthly as the sum of each consecutive 12-month period.
- b. Monthly and annual throughput of natural gas (million cubic feet) for the boilers (Ref. 1760-2-01 and 1760-2-02). Annual throughputs shall be calculated monthly as the sum of each consecutive 12-month period.
- c. All fuel supplier certifications as required by Condition 104.
- d. Written operating procedures and maintenance and training records required by Condition 103.
- e. For 5575-1-01 through 5575-1-04, the DEQ-approved, pollutant-specific emission factors and the equations used to demonstrate compliance with emission limits, as provided in Attachment C.
- f. Results of all visible emission evaluations as required by Condition 107.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110, 40 CFR 60 Subpart Dc, and Condition 14 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)

106. **Testing** – Upon request from the DEQ, safe sampling ports, platforms, and access shall be provided at the appropriate locations.  
(9 VAC 5-80-110 and 9 VAC 5-50-30)

107. **Testing** – Upon request by the DEQ, the permittee shall conduct additional visible emission evaluations on the boiler stack (Stack Ref. 5575-1) to demonstrate compliance with the visible emission limit contained in this permit. The details of the tests shall be arranged with the DEQ.  
(9 VAC 5-80-110, 9 VAC 5-50-30 G and Condition 13 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)

## Electrical Generators and Fire Pumps

As used in the Electrical Generator and Fire Pumps Section of the permit, the classifications “NSPS Group IIII, NSPS Group JJJJ, MACT Group 1a, MACT Group 1b, MACT Group 2, MACT Group 3, MACT Group 4 and MACT Group 5” refer to the generator groupings provided in Attachment B of the permit.

108. **Limitations** – Nitrogen oxides (NO<sub>x</sub>) emissions from the emergency engine-generator sets (Ref. 1149-6-01, 1149-7-01, 0256-2-01R and 0396-1-01R) shall be controlled by engine turbochargers and aftercoolers. The permittee shall maintain documentation that demonstrates the control devices/mechanisms have been installed on the emergency engine-generator sets  
(9 VAC 5-80-110 and Condition 1 of the 3/8/17 Permit)
109. **Limitations** – The approved fuel for the emergency generators (Ref. NSPS Group IIII, MACT Group 1a, MACT Group 2, MACT Group 3, and MACT Group 4 excepting 2464-2-01) is diesel fuel. A change in the type of fuel shall be considered a change in the method of operation of the emergency engine-generator sets and may require a new or amended permit. However, if a change in the fuel is not subject to new source review permitting requirements, this condition should not be construed to prohibit such a change.  
(9 VAC 5-80-110, 40 CFR 63.6590(c), 40 CFR 60.4207, Condition 5 of the 3/8/17 Permit, Condition 4 of the 6/9/10 Permit, Condition 19 of the 5/29/15 Permit, Condition 3 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13, Condition 4 of the 12/20/07 Permit as amended 3/22/10, and Condition 3 of the 3/12/12 Permit)
110. **Limitations** – The approved fuel for the emergency generator (Ref. 7369-1-01R) is propane. The approved fuel for the emergency generators (Ref. 0555-1-01, 0627-1-01, and 2464-2-01) is natural gas. A change in fuel may require a permit to modify and operate.  
(9 VAC 5-80-110)
111. **Limitations** – The emergency generators (Ref. NSPS Group IIII) must use diesel fuel with a sulfur content of no greater than 15 parts per million (0.0015%).  
(9 VAC 5-80-110, 40 CFR 60.4207(b), 40 CFR 80.510(b), Condition 5 of the 12/20/07 Permit, as amended 3/22/10, Condition 5 of the 3/8/17 Permit, and Condition 5 of the 6/9/10 Permit)
112. **Limitations** – The diesel fuel for the 2000 kW compression ignition (CI) engine generator (Ref. 5575-2-01) shall meet the ASTM specifications for numbers 1 or 2 fuel oil and shall not exceed 0.2% sulfur content per shipment. The diesel fuel for the for the CI engine generator (Ref. 7103-2-01) shall meet the ASTM specifications for numbers 1 or 2 fuel oil and shall not exceed 0.5% sulfur content per shipment. The diesel fuel for the for the emergency generator (Ref. No. 7103-3-01) shall meet the ASTM specifications for numbers 1 or 2 fuel oil and shall not exceed 0.05% sulfur content per shipment.  
(9 VAC 5-80-110, Condition 6 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13, Condition 6 of the 3/12/12 Permit, and Condition 23 of the 5/29/15 Permit)



113. **Limitations** – The emergency generator (Ref. 1161-1-01) shall consume no more than 68,250 gallons of diesel fuel per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.  
(9 VAC 5-80-110 and Condition 6 of the 12/20/07 Permit as amended 3/22/10)
114. **Limitations** – The CI engine generator (Ref. 7103-2-01) shall consume no more than 53,261 gallons of diesel fuel per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.  
(9 VAC 5-80-110 and Condition 5 of the 3/12/12 Permit)
115. **Limitations** – The emergency generator (Ref. 0599-1-01) shall consume no more than 86,650 gallons of diesel fuel per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.  
(9 VAC 5-80-110 and Condition 6 of the 6/9/10 Permit)
116. **Limitations** – Each emergency engine-generator set (Ref. 0256-2-01R, 0396-1-01R, 1149-2-01, 1149-3-01, 1149-4-01, 1149-6-01, and 1149-7-01) shall not operate more than 500 hours per year, calculated monthly as the sum of each consecutive 12 month period. Compliance for the consecutive 12 month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.  
(9 VAC 5-80-110 and Conditions 6 and 7 of the 3/8/17 Permit)
117. **Limitations** – The permittee must maintain and operate the emergency generators (Ref. NSPS Group III) according to the manufacturer's written instructions or procedures developed by the permittee that are approved by the manufacturer, over the entire life of the engine. In addition, the permittee may only change those settings that are approved by the manufacturer.  
(9 VAC 5-80-110, 40 CFR 63.6590 (c), 40 CFR 60.4206, 40 CFR 60.4211, Condition 3 of the 3/8/17 Permit, Condition 3 of the 6/9/10 Permit, and Condition 3 of the 12/20/07 Permit as amended 3/22/10)
118. **Limitations** – Generator emissions (Ref. 5575-2-01, 7103-2-01 and 7103-3-01) shall be controlled by proper operation and maintenance. Generator operators shall be trained in the proper operation of all such equipment. Training shall consist of a review and familiarization of the manufacturer's operating instructions, at minimum.  
(9 VAC 5-80-110, Condition 8 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13, Condition 8 of the 3/12/12 Permit, and Condition 25 of the of the 5/29/15 Permit)

119. **Limitations** – Emissions from the operation of the emergency generator (Ref. 5575-2-01) shall not exceed the limits specified below:

<b>Pollutant</b>	<b>Short-term</b>	<b>Annual</b>
Particulate Matter	2.36 lbs/hr	0.59 tons/yr
PM-10	2.36 lbs/hr	0.59 tons/yr
Sulfur Dioxide	4.34 lbs/hr	1.08 tons/yr
Nitrogen Oxides	40.77 lbs/hr	10.19 tons/yr
Carbon Monoxide	50.22 lbs/hr	12.56 tons/yr
Volatile Organic Compounds	5.91 lbs/hr	1.48 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 109, 112, 118, 139, and 149.  
(9 VAC 5-80-110 and Condition 11 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)

120. **Limitations** – Emissions from the operation of the emergency generator (Ref. 7103-2-01) shall not exceed the limits specified below:

<b>Pollutant</b>	<b>Short-term</b>	<b>Annual</b>
Sulfur Dioxide	7.01 lbs/hr	1.75 tons/yr
Nitrogen Oxides (as NO <sub>2</sub> )	44.42 lbs/hr	11.10 tons/yr
Carbon Monoxide	11.80 lbs/hr	2.95 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these limits may be determined as stated in Conditions 109, 112, 114 and 139.  
(9 VAC 5-80-110 and Condition 10 of the 3/12/12 Permit)

121. **Limitations** – Emissions from the operation of the emergency generator (Ref. 7103-3-01) shall not exceed any of the limits specified below:

Pollutant	Short-term	Annual
Particulate Matter	2.38 lbs/hr	0.60 tons/yr
PM-10	2.38 lbs/hr	0.60 tons/yr
Oxides of Nitrogen (as NO <sub>2</sub> )	40.56 lbs/hr	10.14 tons/yr
Carbon Monoxide	50.26 lbs/hr	12.57 tons/yr
Volatile Organic Compounds	5.73 lbs/hr	1.43 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 109, 112, 118 and 139.

(9 VAC 5-80-110 and Condition 26 of the 5/29/15 Permit)

122. **Limitations** – Emissions from the operation of the emergency generator (Ref. 1161-1-01) shall not exceed the limits specified below:

Pollutant	Short-term	Annual
Nitrogen Oxides (as NO <sub>2</sub> )	40.6 lbs/hr	10.1 tons/yr
Carbon Monoxide	50.3 lbs/hr	12.6 tons/yr
Particulate Matter	2.4 lbs/hr	0.6 tons/yr
PM-10	2.4 lbs/hr	0.6 tons/yr
Volatile Organic Compounds	5.7 lbs/hr	1.4 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 109, 111, 113, 117, and 148.

(9 VAC 5-80-110 and Condition 11 of the 12/20/07 Permit as amended 3/22/10)

123. **Limitations** – Emissions from the operation of the emergency generator (Ref. 0599-1-01) shall not exceed the limits specified below:

<b>Pollutant</b>	<b>Short-term</b>	<b>Annual</b>
Nitrogen Oxides (as NO <sub>2</sub> )	35.3 lbs/hr	8.8 tons/yr
Carbon Monoxide	19.3 lbs/hr	4.8 tons/yr
Volatile Organic Compounds	7.2 lbs/hr	1.8 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 109, 111, 115, and 117.  
(9 VAC 5-80-110 and Condition 11 of the 6/9/10 Permit)

124. **Limitations** – Emissions from the operation of each of the emergency generators (Ref. 0256-2-01R, 0396-1-01R, 1149-6-01, and 1149-7-01) shall not exceed the limits specified below:

<b>Pollutant</b>	<b>Short-term</b>	<b>Annual</b>
Nitrogen Oxides (as NO <sub>2</sub> )	31.7 lbs/hr	7.9 tons/yr
Carbon Monoxide	4.3 lbs/hr	1.1 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 108, 109, 111, 116, 144, and 145.  
(9 VAC 5-80-110 and Condition 12 of the 3/8/17 Permit)

125. **Limitations** – Emissions from the operation of each of the emergency generators (Ref. 1149-2-01 and 1149-3-01) shall not exceed the limits specified below:

<b>Pollutant</b>	<b>Short-term</b>	<b>Annual</b>
Nitrogen Oxides (as NO <sub>2</sub> )	40.1 lbs/hr	10.0 tons/yr
Carbon Monoxide	3.3 lbs/hr	0.8 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 109, 111, 116, 144, and 145.

(9 VAC 5-80-110 and Condition 13 of the 3/8/17 Permit)

126. **Limitations** – Emissions from the operation of the emergency generator (Ref. 1149-4-01) shall not exceed the limits specified below:

Pollutant	Short-term	Annual
Nitrogen Oxides (as NO <sub>2</sub> )	27.7 lbs/hr	6.9 tons/yr
Carbon Monoxide	2.8 lbs/hr	0.7 tons/yr

Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. These emissions are derived from the estimated overall contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Conditions 109, 111, 144, and 145.

(9 VAC 5-80-110 and Condition 14 of the 3/8/17 Permit)

127. **Limitations** – Visible emissions from the 2000 kW CI-engine generator stack (Stack Ref. 5575-2) shall not exceed 10 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.

(9 VAC 5-80-110, 9 VAC 5-50-80 and Condition 12 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13)

128. **Limitations** – Visible emissions from the emergency generators (Ref. 0256-2-01R, 0396-1-01R, 0599-1-01, 1149-2-01, 1149-3-01, 1149-4-01, 1149-6-01, 1149-7-01, and 1161-1-01) shall not exceed 10 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.

(9 VAC 5-80-110, 9 VAC 5-50-80, Conditions 15 and 16 of the 3/8/17 Permit, Condition 13 of the 6/9/10 Permit, and Condition 13 of the 12/20/07 Permit as amended 3/22/10)

129. **Limitations** – Visible emissions from the emergency generators (0068-1-01, 0267-1-01, 0580-3-01, 1148-1-01, 1148-2-01, 1148-3-01, 1148-4-01, 1149-1-01, 1155-1-01, 1194-1-01, 1196-1-01, 1998-1-01, 3761-1-01, 7103-2-01, 7103-3-01, 7185-1-01) shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.

(9 VAC 5-80-110, 9 VAC 5-50-80, Condition 11 of the 3/12/12 Permit, and Condition 34 of the 5/29/15 Permit)

130. **Limitations** – Except where this permit is more restrictive, the emergency generators (Ref. NSPS Group IIII) shall be operated in compliance with the requirements of 40 CFR 60, Subpart IIII.  
(9 VAC 5-60-90, 9 VAC 5-60-100, 9 VAC 5-80-110, 40 CFR 60 Subpart IIII, Condition 10 of the 6/9/10 Permit, Condition 10 of the 12/20/07 Permit as amended 3/22/10, and Condition 11 of the 3/8/17 Permit)
131. **Limitations** – Except where this permit is more restrictive, the emergency generators (MACT Group 2, MACT Group 3, MACT Group 4, and MACT Group 5) shall be operated in compliance with the requirements of 40 CFR 63, Subpart ZZZZ.  
(9 VAC 5-60-90, 9 VAC 5-60-100, 9 VAC 5-80-110, 40 CFR 63 Subpart ZZZZ, Condition 38 of the 5/29/15 Permit, Condition 10 of the 6/9/10 Permit, and Condition 10 of the 12/20/07 Permit as amended 3/22/10)
132. **Limitations** – Except where this permit is more restrictive, the emergency generators (NSPS Group JJJJ) shall be operated in compliance with the applicable requirements of 40 CFR 60, Subpart JJJJ.  
(9 VAC 5-80-110 and 40 CFR 60 Subpart JJJJ)
133. **Limitations** – The emergency generators (Ref. MACT Group 4 and NSPS JJJJ Group) must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the applicable requirements of 40 CFR 60 Subpart IIII or 40 CFR 60 Subpart JJJJ.  
(9 VAC 5-80-110 and 40 CFR 63.6590(c))
134. **Limitations** – Emissions from the operation of the emergency generators (Ref. 0267-1-01, 1149-1-01, and 1161-1-01) shall not exceed the limits specified below:

Pollutant	NSPS
Particulate Matter	0.54 g/KW-hr
Nitrogen Oxides	9.2 g/KW-hr
Carbon Monoxide	11.4 g/KW-hr
Hydrocarbons (HC)	1.3 g/KW-hr

Compliance with these emission limits may be determined by keeping records of engine manufacture data indicating compliance with these emission limits.

(9 VAC 5-80-110, 40 CFR 60.4205 (a), 40 CFR 60.4211(b), and Condition 12 of the 12/20/07 Permit as amended 3/22/10)

135. **Limitations** – Emissions from the operation of the specified emergency generators shall not exceed the limits specified below:

**NSPS Subpart IIII**

Ref. Nos.	NMHC + NO <sub>x</sub>	CO	PM
0131-1-01 0204-1-01 0214-1-01 0254-1-01 0264-1-01 1146-1-01R 1149-5-01 1176-2-01 1604-1-01 2150-1-01 2217-1-01 2368-1-01 2371-1-01 2372-1-01 2373-1-01 2374-1-01 2375-1-01 2382-1-01 3708-1-01R 3755-1-01 7147-1-01 7273-1-01 7533-2-01R	4.0 g/kW-hr	3.5 g/kW-hr	0.2 g/kW-hr
0446-1-01 0527-1-01 3760-1-01 7186-1-01	4.0 g/kW-hr	5.0 g/kW-hr	0.3 g/kW-hr

Ref. Nos.	NMHC + NO <sub>x</sub>	CO	PM
0210-1-01R 0215-1-01 0256-2-01R 0396-1-01R 0580-3-01 0599-1-01 1142-1-01 1146-1-01R 1148-5-01 1149-2-01 1149-3-01 1149-4-01 1149-6-01 1149-7-01 1157-1-01R 1172-1-01 1603-5-01 1760-1-01 1985-1-01	6.4 g/kW-hr	3.5 g/kW-hr	0.2 g/kW-hr
0593-1-01	4.0 g/kW-hr	--	0.3 g/kW-hr
0122-1-01 5577-1-01	4.7 g/kW-hr	5.0 g/kW-hr	0.4 g/kW-hr

Compliance with these emission limits may be determined by keeping records of engine manufacture data indicating compliance with these emission limits.

(9 VAC 5-80-110, 40 CFR 60.4205(b), 40 CFR 60.4205(c) and 40 CFR 60.4211(c), and Condition 12 of the 6/9/10 Permit)

136. **Limitations** – Emissions from the operation of each emergency generator shall not exceed the limits specified below:

**NSPS Subpart JJJJ**

Ref. No.	NO <sub>x</sub> + HC	CO
2464-2-01 7369-1-01R	10 g/HP-hr	387 g/HP-hr

The permittee must operate and maintain each emergency generator (Ref. 2464-2-01 and 7369-1-01R) over the entire life of the engine. Compliance with these emission limits may be determined as stated in Condition 151.

(9 VAC 5-80-110, 40 CFR 60.4233(d), and 40 CFR 60.4234)

137. **Limitations** –The permittee must operate the emergency stationary ICE (MACT Group 2, MACT Group 4, MACT Group 5, NSPS Group JJJJ and NSPS Group IIII) according to the following requirements. In order for the engine to be considered an emergency stationary



ICE, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described below, is prohibited. If you do not operate the engine according to the following requirements, the engine will not be considered an emergency engine under 40 CFR 60 Subpart JJJJ, 40 CFR 60 Subpart IIII, or 40 CFR 63 Subpart ZZZZ, and must meet all requirements for non-emergency engines:

- a. There is no time limit on the use of emergency stationary ICE in emergency situations.
- b. You may operate your emergency stationary ICE for any combination of the purposes specified in this paragraph (Condition 126.b) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by Condition 137.c counts as part of the 100 hours per calendar year. Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.
- c. Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in 137.b. The 50 hours per year for non-emergency situations cannot be used for peak shaving, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(9 VAC 5-80-110, 40 CFR 60.4211(f), 40 CFR 60.4243(d), 40 CFR 60.4219, 40 CFR 63.6590 (c), 40 CFR 63.6640 (f), Condition 9 of the 3/8/17 Permit, Condition 8 of the 6/9/10 Permit, and Condition 8 of the 12/20/07 Permit as amended 3/22/10)

138. **Limitations** - Owners and operators of stationary SI natural gas fired engines (Ref. NSPS Group JJJJ) may operate their engines using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the owners and operators are required to conduct a performance test to demonstrate compliance with the emission standards of §60.4233.

(9 VAC 5-80-110 and 40 CFR 60.4243 (e))

139. **Limitations** – The emergency generators (Ref. 5575-2-01, 7103-2-01 and 7103-3-01) are to be used only for providing power at the location during interruption of service from the normal power supplier, periodic maintenance testing, and operational training. Each emergency generator use may not exceed 500 hours per year.

(9 VAC 5-80-110, Condition 4 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13, Condition 4 of the 3/12/12 Permit, and Condition 20 of the 5/29/15 Permit)

140. **Limitations** – The CI engines (Ref. MACT Group 2) shall comply with the maintenance requirements specified in sections 1 (a) through (c) of Table 2c to Subpart ZZZZ:

- a. Change oil and filter every 500 hours of operation or annually, whichever comes first, or at an extended frequency if utilizing an oil analysis program as described in §63.6625(i);
- b. Inspect air cleaner every 1000 hours of operation or annually, whichever comes first; and
- c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first.

(9 VAC 5-80-110, 9 VAC 5-60-90, 9 VAC 5-60-100, and 40 CFR 63, Subpart ZZZZ)

141. **Limitations** – The spark ignition (SI) engines (Ref. MACT Group 5) shall comply with the maintenance requirements specified in sections 6 (a) through (c) of Table 2c to Subpart ZZZZ:

- a. Change oil and filter every 500 hours of operation or annually, whichever comes first, or at an extended frequency if utilizing an oil analysis program as described in §63.6625(i);
- b. Inspect spark plugs every 1000 hours of operation or annually, whichever comes first; and
- c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first.

(9 VAC 5-80-110, 9 VAC 5-60-90, 9 VAC 5-60-100, and 40 CFR 63, Subpart ZZZZ)

142. **Limitations** – During periods of startup the permittee must minimize the time spent at idle for the emergency engines (Ref. MACT Group 2 and MACT Group 5) and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

(9 VAC 5-80-110 and 40 CFR 63.6625(h))

143. **Limitations** – At all times, including periods of startup, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the emergency generators (Ref. 0256-2-01R, 0396-1-01R, 0599-1-01, 1149-2-01, 1149-3-01, 1149-4-01, 1149-6-01, and 1149-7-01, 1161-1-01, 5575-2-01, 7103-2-01, and 7103-3-01), including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to the operation of the emergency generator:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.

- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.

(9 VAC 5-80-110, Condition 22 of the 12/20/07 Permit as amended on 3/22/10, Condition 23 of the 6/9/10 Permit, Condition 21 of the 10/13/04 Permit, as amended 3/22/10 and 7/18/13, Condition 23 of the 3/8/17 Permit, Condition 21 of the 3/12/12 Permit, and Condition 60 of the 5/29/15 Permit)

- 144. **Monitoring** – The permittee must install a non-resettable hour meter prior to the startup of the emergency generators (Ref. NSPS Group IIII). The hour meter shall be provided with adequate access for inspection.  
(9 VAC 5-80-110, 40 CFR 63.6590 (c), 40 CFR 60.4209, Condition 2 of the 3/8/17 Permit, Condition 2 of the 6/9/10 Permit, and Condition 2 of the 12/20/07 Permit as amended 3/22/10)
- 145. **Monitoring** - The non-resettable hour meter used to continuously measure the hours of operation for each engine-generator set (Ref. 0256-2-01R, 0396-1-01R, 1149-2-01, 1149-3-01, 1149-4-01, 1149-6-01, and 1149-7-01) shall record the length of time the engine-generator set is operated at each occurrence. The non-resettable hour meter used to continuously measure the hours of operation for each emergency engine-generator set shall be observed by the owner with a frequency of not less than once each month the emergency engine-generator set is operated. The owner shall keep a log of these observations. Each monitoring device shall be installed, maintained, calibrated (as appropriate) and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the respective emergency engine-generator set is operating.  
(9 VAC 5-80-110 and Condition 2 of the 3/8/17 Permit)
- 146. **Monitoring** – The facility shall install non-resettable hour meters on the emergency stationary RICE (Ref. MACT Group 2 and MACT Group 5). The hour meter shall be provided with adequate access for inspection.  
(9 VAC 5-80-110 and 40 CFR 63.6625 (f))
- 147. **Monitoring** – The permittee shall develop a maintenance plan for the emergency generators (Ref. MACT Group 2 and MACT Group 5) that provides to the extent

practicable for the maintenance and operation of each engine in a manner consistent with good air pollution control practice for minimizing emissions.

(9 VAC 5-80-110, 9 VAC 5-60-90, 9 VAC 5-60-100, and 40 CFR 63.6625 (e))

148. **Monitoring** – The permittee shall obtain a certification from the fuel supplier with each shipment of diesel fuel for the emergency generators (Ref. NSPS Group IIII, 5575-2-01, 7103-2-01, 7103-3-01, and MACT Group 4 excepting 2464-2-01). Each fuel supplier certification shall include the following:
- a. The name of the fuel supplier;
  - b. The date on which the diesel fuel was received;
  - c. The volume of diesel fuel delivered in the shipment;
  - d. A statement that the diesel fuel complies with the ASTM specifications for numbers 1 or 2 fuel oil or ASTM specifications for D396, as applicable;
  - e. The sulfur content of the diesel fuel; and
  - f. The method used to determine the sulfur content of the diesel fuel for the emergency generator (Ref. 7103-3-01).

Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Condition 111. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.

(9 VAC 5-80-110, Condition 8 of the 3/8/17 Permit, Condition 7 of the 6/9/10 Permit, Condition 7 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13, Condition 7 of the 3/12/12 Permit, Condition 7 of the 12/20/07 Permit as amended 3/22/10, and Condition 24 of the 5/29/15 Permit)

149. **Monitoring** – The permittee shall maintain records of the required training including a statement of time, place and nature of training provided. The permittee shall have available good written operating procedures and a maintenance schedule for the generators (Ref. 5575-2-01, 7103-2-01 and 7103-3-01). These procedures shall be based on the manufacturer's recommendations, at minimum.

(9 VAC 5-80-110, Condition 8 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13, Condition 8 of the 3/12/12 Permit, and Condition 25 of the 5/29/15 Permit)

150. **Monitoring** - If an emergency generator (Ref. NSPS Group JJJJ) does not meet the standards applicable to non-emergency engines, the permittee must install a non-resettable hour meter upon startup of the emergency engine.

(9 VAC 5-80-110 and 40 CFR 60.4237(c))

151. **Monitoring** – The permittee must demonstrate compliance with the NSPS Subpart JJJJ requirements for the emergency generators in NSPS Group JJJJ according to one of the following methods:

- a. Purchasing an engine certified according to procedures specified in 40 CFR 60 Subpart JJJJ, for the same model year and demonstrating compliance according to one of the methods specified.
  - i You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator. You must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance.
  - ii If you do not operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, your engine will be considered a non-certified engine, and you must demonstrate compliance by keeping a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required if you are an owner or operator.
- b. Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in §60.4233(d) or (e) and according to the requirements specified in §60.4244, as applicable, and you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance.

(9 VAC 5-80-110 and 40 CFR 60.4243(b))

152. **Recordkeeping** – The permittee must meet the following notification, reporting and recordkeeping requirements for the SI ICE (Ref. NSPS Group JJJJ):

- a. Owners and operators of all stationary SI ICE must keep records of the information in (i) through (iv).
  - i All notifications submitted to comply with this subpart and all documentation supporting any notification.
  - ii Maintenance conducted on the engine.
  - iii If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.

- iv If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.
- b. For all stationary SI emergency ICE that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

(9 VAC 5-80-110 and 40 CFR 60.4245)

153. **Recordkeeping** – The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:

- a. All fuel supplier certifications.
- b. Written operating procedures and maintenance and training records as required by Condition 149.
- c. Results of all stack tests and visible emission evaluations.
- d. Monthly and annual throughput of diesel fuel, in gallons, for the generator (Ref. 7103-2-01). Annual throughput shall be calculated monthly as the sum of each consecutive 12-month period.
- e. Annual throughput of diesel fuel, in gallons, for the emergency generators (Ref. 0599-1-01 and 1161-1-01). Annual throughput shall be calculated monthly as the sum of each consecutive 12-month period.
- f. Annual hours of operation for the generators (Ref. 5575-2-01, 7103-2-01, 7103-3-01, 1149-2-01, 1149-3-01, 1149-4-01, 1149-6-01, 1149-7-01, 0256-2-01R and 0396-1-01R) calculated monthly as the sum of each consecutive 12-month period.
- g. Annual hours of operation for the generators (Ref. 0599-1-01, 1161-1-01, 1149-2-01, 1149-3-01, 1149-4-01, 1149-6-01, 1149-7-01, 0256-2-01R and 0396-1-01R) for emergency purposes, maintenance checks and readiness testing calculated monthly as the sum of each consecutive 12-month period.
- h. Scheduled and unscheduled maintenance, and operator training.
- i. Records of engine manufacture data as required in Conditions 134 and 135.

- j. Records of the maintenance conducted on the CI engines (Ref. MACT Group 2) and SI engines (Ref. MACT Group 5), in order to demonstrate that each engine is operated and maintained according to the maintenance plan required by Condition 147.
- k. Records of the hours of operation of the CI engines (Ref. MACT Group 2, MACT Group 4 and NSPS Group IIII) and SI engines (Ref. MACT Group 5) that are recorded on a non-resettable hour meter. The permittee must document how many hours are spent annually for each of the following: emergency operation (including what classified the operation as emergency), non-emergency operation, maintenance, and testing. Annual hours shall be calculated monthly as the sum of each consecutive 12-month period.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110, 40 CFR 63.6655 (e) and (f), 9 VAC 5-50-50, Condition 17 of the 3/8/17 Permit, Condition 17 of the 6/9/10 Permit, Condition 14 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13, Condition 14 of the 3/12/12 Permit, Condition 17 of 12/20/07 Permit as amended 3/22/10, and Condition 57 of the 5/29/15 Permit)

- 154. **Testing** – Upon request by the DEQ, the permittee shall conduct additional visible emission evaluations on the emergency generators to demonstrate compliance with the visible emission limits contained in this permit. The details of the tests shall be arranged with the DEQ.  
(9 VAC 5-80-110, Condition 56 of 5/29/15 Permit, Condition 13 of the 10/13/04 Permit as amended 3/22/10 and 7/18/13, Condition 16 of the 12/20/07 Permit as amended 3/22/10, Condition 16 of the 6/9/10 Permit and Condition 18 of the 3/8/17 Permit)
- 155. **Testing** – The emergency generators (Ref. 0599-1-01, 1149-2-01, 1149-3-01, 1149-4-01, 1149-6-01, 1149-7-01, 0256-2-01R and 0396-1-01R) shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Safe sampling ports, platforms, and access shall be provided at appropriate locations when requested.  
(9 VAC 5-80-110, Condition 2 of the 3/12/12 Permit, Condition 4 of the 3/8/17 Permit, and Condition 14 of the 6/9/10 Permit.)
- 156. **Reporting** – The source must submit initial notification 120 days after start-up of the emergency generators (Ref. MACT Group 3). The initial notification must contain all the following information:
  - a. The name and address of the owner or operator;
  - b. The address (i.e., physical location) of the affected source;
  - c. An identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date;

- d. A brief description of the nature, size, design, and method of operation of the source and an identification of the types of emission points within the affected source subject to the relevant standard and types of hazardous air pollutants emitted;
- e. A statement of whether the affected source is a major source or an area source; and
- f. A statement explaining that the stationary RICE has no additional requirements under 40 CFR 63 Subparts A or ZZZZ and an explanation of the basis of the exclusion.

One copy of the notification shall be submitted to the U.S. Environmental Protection Agency at the address specified below:

Chief, Air Section  
Enforcement & Compliance Assurance Division  
Air, RCRA and Toxics Branch  
US EPA Region 3  
1650 Arch Street – 3ED21  
Philadelphia, PA 19103

(9 VAC 5-80-110, 40 CFR 63.6645(f) and 40 CFR 63.9(b)(2))



## Woodworking Equipment

157. **Limitations** – Particulate matter emissions from the Cabinet Shop (Ref. 0273-1-01) shall be controlled by a fabric filter (Ref. 0273-BH1) discharged into a closed system. The fabric filter shall be provided with adequate access for inspection.  
(9 VAC 5-80-110)
158. **Limitations** – Particulate matter emissions from the woodworking equipment exhaust (Ref. 0273-1-01) shall not exceed 0.05 grains per standard cubic feet of exhaust gas.  
(9 VAC 5-80-110 and 9 VAC 5-50-2270)
159. **Monitoring** – The permittee shall perform weekly inspections of the fabric filter (Ref. 0273-BH1). The inspections shall include an observation of the presence of visible emissions. The presence of visible emissions shall require further investigation as to the cause of the visible emissions and corrective action shall be taken.  
(9 VAC 5-80-110)
160. **Recordkeeping** – The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to, a log of weekly fabric filter inspections results including:
- a. The date, time, and name of person performing each inspection;
  - b. Whether or not there were visible emissions; and
  - c. Any maintenance or repairs performed as a result of these inspections including the date, time and person performing the repairs.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110)

## Spray Coating Booth

161. **Limitations** – Particulate emissions from the spray coating booth (Ref. 0233-SCB) shall be controlled by a filter. The filter shall be provided with adequate access for inspection and shall be installed and operating when the spray coating booth is operating.  
(9 VAC 5-80-110 and Condition 2 of the 1/3/14 Permit)
162. **Limitations** – VOCs shall not be intentionally spilled, discarded to sewers, stored in open containers, or handled in any other manner that would result in evaporation beyond that consistent with air pollution control practices for minimizing emissions.  
(9 VAC 5-80-110 and Condition 5 of the 1/3/14 Permit)
163. **Limitations** – The materials (i.e. coatings, stains, thinners, cleaning solvents, adhesives, coating removal solvents, etc.) throughput to the spray coating booth (Ref. 0233-SCB) shall not exceed 100 gallons per month.  
(9 VAC 5-80-110 and Condition 6 of the 1/3/14 Permit)
164. **Limitations** – VOC emissions from the operation of the spray coating booth (Ref. 0233-SCB) shall not exceed 5.4 tons/yr. These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition numbers 162 and 163.  
(9 VAC 5-80-110 and Condition 7 of the 1/3/14 Permit)
165. **Limitations** – Visible emissions from the spray coating booth filter shall not exceed 5 percent as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).  
(9 VAC 5-80-110 and Condition 8 of the 1/3/14 Permit)
166. **Monitoring** – The spray coating booth (Ref. 0233-SCB) shall be equipped with a device to continuously measure the differential pressure drop across the filter. The monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. The monitoring device shall be provided with adequate access for inspection and shall be in operation when the filter is operating.  
(9 VAC 5-80-110 and Condition 3 of the 1/3/14 Permit)
167. **Monitoring** – To ensure good performance, the monitoring device used to continuously measure the differential pressure drop across the spray coating booth filter shall be observed by the permittee with a frequency of not less than once per day when the booth (Ref. 0233-SCB) is in operation and no less than as recommended by the equipment manufacturer. The permittee shall keep a log of the monitoring device observations. The log shall include the name of the observer, the date and time of the observations, and the date, time, and description of any corrective actions taken.  
(9 VAC 5-80-110 and Condition 4 of the 1/3/14 Permit)

168. **Recordkeeping** – The permittee shall maintain records of emissions data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. Material Safety Data Sheets (MSDS), Certified Product Data Sheets (CPDS), or other vendor information as approved by DEQ showing the contents for each material used in the spray coating booth;
  - b. Monthly and annual material throughput (gallons) for the spray coating booth (Ref. 0233-SCB) (i.e. coatings, stains, thinners, cleaning solvents, adhesives, coating removal solvents, etc.). Annual throughput shall be calculated monthly as the sum of each consecutive 12-month period;
  - c. Manufacturer's or vendor information, as approved by DEQ, showing the particulate removal efficiency (percent) of the spray coating booth (Ref. 0233-SCB);
  - d. Operation, control device monitoring, and corrective action log records for the spray coating booth filter as required in Condition 167; and
  - e. Visible emission evaluation test results as required in Condition 169.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110 and Condition 10 of the 1/3/14 Permit)

169. **Testing** – Upon request by the DEQ, the permittee shall conduct visible emission evaluations from the spray coating booth filter to demonstrate compliance with the visible emission limits contained in this permit. The details of the tests shall be arranged with the DEQ.

(9 VAC 5-80-110 and Condition 13 of the 1/3/14 Permit)

170. **Testing** – The facility shall be constructed to allow for emissions testing upon reasonable notice at any time, using appropriate methods. This includes constructing the facility such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and providing a stack or duct that is free from cyclonic flow. Safe sampling ports, platforms, and access shall be provided at appropriate locations when requested.

(9 VAC 5-80-110 and Condition 9 of the 1/3/14)

## Medical Equipment

171. **Limitations** – Visible emissions from each ethylene oxide sterilizer (Ref. 1150-1-06 and 1150-1-07) shall not exceed five percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).  
(9 VAC 5-80-110 and Condition 12 of the 3/12/12 Permit)
172. **Limitations** – The ethylene oxide sterilizers (Ref. 1150-1-06 and 1150-1-07) emissions shall be controlled by proper operation and maintenance. Operators shall be trained in the proper operation of the emission units. Training shall consist of a review and familiarization with the manufacturer's operating instructions, at minimum.  
(9 VAC 5-80-110 and Condition 8 of the 3/12/12 Permit)
173. **Monitoring** – The permittee shall maintain records of the required training including a statement of time, place and nature of training provided. The permittee shall have available good written operating procedures and a maintenance schedule for the emission units. These procedures shall be based on the manufacturer's recommendations, at minimum. All records required by this condition shall be kept on site and made available for inspection by the DEQ.  
(9 VAC 5-80-110 and Condition 8 of the 3/12/12 Permit)
174. **Recordkeeping** - The permittee shall maintain records of emissions data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. Annual throughput of ethylene oxide (EtO) for the ethylene oxide sterilizers. Annual throughput shall be calculated monthly as the sum of each consecutive 12-month period.
  - b. Records of the required operator training including a statement of time, place and nature of training provided.
  - c. Results of all visible emission evaluations.
- These records shall be available for inspection by the DEQ and shall be current for the most recent five years.  
(9 VAC 5-80-110 and Condition 14 of the 3/12/12 Permit)
175. **Testing** - The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Safe sampling ports, platforms, and access shall be provided at appropriate locations when requested.  
(9 VAC 5-80-110 and Condition 2 of the 3/12/12 Permit)
176. **Testing** - Upon request by the DEQ, the permittee shall conduct additional visible emission evaluations on the ethylene oxide sterilizers (Ref. 1150-1-06 and 1150-1-07) to

demonstrate compliance with the visible emission limit contained in this permit. The details of the tests shall be arranged with the DEQ.

(9 VAC 5-80-110 and Condition 13 of the 3/12/12 Permit)

## Boiler MACT Requirements (NESHAP for Industrial/Commercial/Institutional Boilers and Process Heaters - 40 CFR 63 Subpart DDDDD)

As used in the Boiler MACT Section of the permit:

- “Boiler 1R” refers to Emission Unit 7103-1-01R;
- “Boiler 2R” refers to Emission Unit 7103-1-02R;
- “Boiler 3R” refers to Emission Unit 7103-1-03R;
- “Boiler 4R” refers to Emission Unit 7103-1-04R;
- “Boiler 5” refers to Emission Unit 7103-1-05;
- “Boiler 6” refers to Emission Unit 7103-1-06;
- the classifications “Boiler Group 1”, “Boiler Group 2”, and “Boiler Group 3” refer to the boiler groupings provided in Attachment D of the permit; and
- “you” refers to the permittee.

177. **Limitations: Subpart DDDDD** – Except where this permit is more restrictive, the boilers (Ref. Boilers 1R – 4R, 5, and 6, and Boiler Groups 1, 2, and 3) shall be operated in compliance with the requirements of 40 CFR 63, Subpart DDDDD.  
(9 VAC 5-80-110 and 40 CFR 63 Subpart DDDDD)

178. **Limitations** – Emissions shall not exceed the limits specified below:

Emission Unit	Pollutant	Heat Input-based limits (lb/MMBtu, unless indicated otherwise)	Steam Output-based limits (lb/MMBtu)
Each of the following units when firing coal:  Boiler 1R Boiler 2R Boiler 5	CO	160 ppm @ 3% O2 (test) <u>or</u> 340 ppm @ 3% O2 (CEMS)	0.14
	PM (filterable)	----- 4.0E-2	----- 4.2E-2
	HCl	----- 2.2E-2	----- 2.5E-2
	Hg	----- 5.7E-6	----- 6.4E-6
Each of the following units, when firing oil:  Boiler 3R Boiler 4R	CO	130 ppm @ 3% O2	0.13
	PM (filterable)	----- 7.9E-3	----- 9.6E-3
	HCl	----- 1.1E-3	----- 1.4E-3
	Hg	----- 2.0E-6	----- 2.5E-6

<b>Emission Unit</b>	<b>Pollutant</b>	<b>Heat Input-based limits</b> (lb/MMBtu, unless indicated otherwise)	<b>Steam Output-based limits</b> (lb/MMBtu)
Boiler 6, when firing oil	CO	130 ppm @ 3% O <sub>2</sub>	--
	PM (filterable)	1.1E-3	--
	HCl	4.4E-4	--
	Hg	4.8E-7	--

The limits apply to you at all times any boiler (Boilers 1R – 4R, 5 and 6) is operating except for the periods noted in Conditions 181 and 182.

(9 VAC 5-80-110, 40 CFR 63.7500(a)(1), 40 CFR 63.7505(a), and Tables 1 and 2 of 40 CFR 63 Subpart DDDDD)

179. **Operating Limits** – For any one of the boilers (Boilers 1R, 2R and 5) for which compliance is demonstrated by a performance test, you must maintain the 30-day rolling average operating load of each unit such that it does not exceed 110 percent of the highest hourly average operating load recorded during the performance test. The operating limit applies to you at all times any boiler (Boilers 1R, 2R and 5) is firing coal except for the periods noted in Conditions 181 and 182.  
(9 VAC 5-80-110, 40 CFR 63.7500(a)(2), 40 CFR 63.7505(a) and Table 4 of 40 CFR 63 Subpart DDDDD)
180. **Operating Limits** – At all times, you must operate and maintain Boilers 1R, 2R and 5 and the boilers listed in Attachment D, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to DEQ that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.  
(9 VAC 5-80-110 and 40 CFR 63.7500(a)(3))
181. **Work Practice Standards: Startup** – For Boilers 1R thru 4R, 5, and 6, the following work practice standards apply during startup of each unit:
- a. You must operate all continuous monitoring systems (CMS) during startup;
  - b. For startup of a boiler, you must use one or a combination of the following clean fuels: Natural gas, synthetic natural gas, propane, other Gas 1 fuels, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, liquefied petroleum gas, clean dry biomass, and any fuels meeting the appropriate HCl, mercury and total selected metals (TSM) emission standards by fuel analysis.
  - c. You have the option of complying using either of the following work practice standards:
    - i. If you choose to comply using definition (1) of “startup” in §63.7575, once you start firing fuels that are not clean fuels, you must vent emissions to the main stack(s) and

engage all of the applicable control devices except limestone injection in fluidized bed combustion (FBC) boilers, dry scrubber, fabric filter, and selective catalytic reduction (SCR). You must start your limestone injection in FBC boilers, dry scrubber, fabric filter, and SCR systems as expeditiously as possible. Startup ends when steam or heat is supplied for any purpose, OR

- ii If you choose to comply using definition (2) of “startup” in §63.7575, once you start to feed fuels that are not clean fuels, you must vent emissions to the main stack(s) and engage all of the applicable control devices so as to comply with the emission limits within 4 hours of start of supplying useful thermal energy. You must engage and operate PM control within one hour of first feeding fuels that are not clean fuels. You must start all applicable control devices as expeditiously as possible, but, in any case, when necessary to comply with other standards applicable to the source by a permit limit or a rule other than this subpart that require operation of the control devices. You must develop and implement a written startup and shutdown plan, as specified in §63.7505(e).
- d. You must comply with all applicable emission limits at all times except during startup and shutdown periods at which time you must meet this work practice. You must collect monitoring data during periods of startup, as specified in §63.7535(b). You must keep records during periods of startup. You must provide reports concerning activities and periods of startup, as specified in §63.7555.

(9 VAC 5-80-110, 40 CFR 63.7500(f) and Item 5 of Table 3 of 40 CFR 63 Subpart DDDDD)

182. **Work Practice Standards: Shutdown** - For Boilers 1R thru 4R, 5, and 6, the following work practice standards apply during shutdown of each unit:

- a. You must operate all CMS during shutdown.
- b. While firing fuels that are not clean fuels during shutdown, you must vent emissions to the main stack(s) and operate all applicable control devices, except limestone injection in FBC boilers, dry scrubber, fabric filter, and SCR but, in any case, when necessary to comply with other standards applicable to the source that require operation of the control device.
- c. If, in addition to the fuel used prior to initiation of shutdown, another fuel must be used to support the shutdown process, that additional fuel must be one or a combination of the following clean fuels: Natural gas, synthetic natural gas, propane, other Gas 1 fuels, distillate oil, syngas, ultra-low sulfur diesel, refinery gas, and liquefied petroleum gas.
- d. You must comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of shutdown, as specified in §63.7535(b). You must keep records during periods of shutdown. You must provide reports concerning activities and periods of shutdown, as specified in 40 CFR 63.7555.



(9 VAC 5-80-110, 40 CFR 63.7500(f) and Item 6 of Table 3 of 40 CFR 63 Subpart DDDDD)

183. **General Compliance Requirements** - You must demonstrate compliance with the emission limits in Condition 178 using performance stack testing, fuel analysis, or continuous monitoring systems (CMS), including a continuous emission monitoring system (CEMS), or particulate matter continuous parameter monitoring system (PM CPMS), where applicable. You may demonstrate compliance with the applicable emission limit for hydrogen chloride (HCl), mercury, or total selected metals (TSM) using fuel analysis if the emission rate calculated according to 40 CFR 63.7530(c) is less than the applicable emission limit. (For gaseous fuels, you may not use fuel analyses to comply with the TSM alternative standard or the HCl standard.) Otherwise, you must demonstrate compliance for HCl, mercury, or TSM using performance stack testing  
(9 VAC 5-80-110 and 40 CFR 63.7505(c))

184. **General Compliance Requirements** - If you demonstrate compliance with any applicable emission limit through performance testing and subsequent compliance with operating limits through the use of CPMS, or with a CEMS or COMS, you must develop a site-specific monitoring plan according to the requirements in (a) through (d) for the use of any CEMS, COMS, or CPMS. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under 40 CFR 63.8(f).

- a. For each CMS required in this section (including CEMS, COMS, or CPMS), you must develop, and submit to DEQ for approval upon request, a site-specific monitoring plan that addresses design, data collection, and the quality assurance and quality control elements outlined in 40 CFR 63.8(d) and the elements described in paragraphs (i) through (iii) below. You must submit this site-specific monitoring plan, if requested, at least 60 days before your initial performance evaluation of your CMS. This requirement to develop and submit a site specific monitoring plan does not apply to affected sources with existing CEMS or COMS operated according to the performance specifications under appendix B to 40 CFR 60 and that meet the requirements of 40 CFR 63.7525. Using the process described in 40 CFR 63.8(f)(4), you may request approval of alternative monitoring system quality assurance and quality control procedures in place of those specified in this paragraph and, if approved, include the alternatives in your site-specific monitoring plan.
- i Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);
  - ii Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and
  - iii Performance evaluation procedures and acceptance criteria (e.g., calibrations, accuracy audits, analytical drift).
- b. In your site-specific monitoring plan, you must also address paragraphs (i) through (iii) below.

- i Ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR 63.8(c)(1)(ii), (c)(3), and (c)(4)(ii);
  - ii Ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR 63.8(d); and
  - iii Ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR 63.10(c) (as applicable in Table 10 to 40 CFR 63 Subpart DDDDD), (e)(1), and (e)(2)(i).
- c. You must conduct a performance evaluation of each CMS in accordance with your site-specific monitoring plan.
- d. You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.

(9 VAC 5-80-110 and 40 CFR 63.7505(d))

185. **General Compliance Requirements** - If you have an applicable emission limit, and you choose to comply using definition (2) of “startup” in 40 CFR 63.7575, you must develop and implement a written startup and shutdown plan (SSP) according to the requirements in Table 3 to 40 CFR 63 Subpart DDDDD. The SSP must be maintained onsite and available upon request for public inspection.

(9 VAC 5-80-110 and 40 CFR 63.7505(e))

186. **Tune-Up: Every Five Years** – For Boilers 1R - 4R, 5, and 6 and for boilers listed under Group 3 in Attachment D, you must conduct a performance tune-up every five years, as specified below. Each 5-year tune-up must be conducted no more than 61 months after the initial startup and then 61 months after the previous tune-up. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

- a. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection. At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;
- b. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
- c. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection;

- d. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO<sub>x</sub> requirement to which the unit is subject;
- e. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and
- f. Maintain on-site and submit, if requested by DEQ, a report containing the information in paragraphs (i) through (iii) below:
  - i The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;
  - ii A description of any corrective actions taken as a part of the tune-up; and
  - iii The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

(9 VAC 5-80-110, 40 CFR 63.7500(a)(1), 40 CFR 63.7515(d), 40 CFR 63.7540(a)(10), (12), and (13), and Table 3 of 40 CFR 63 Subpart DDDDD)

187. **Tune-Up: Every Two Years** – For Boilers listed under Group 2 in Attachment D, you must conduct a performance tune-up biennially, following the specifications in Condition 186.a through f. Each 2-year tune-up must be conducted no more than 25 months after the initial startup and then 25 months after the previous tune-up. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

(9 VAC 5-80-110, 40 CFR 63.7500(a)(1), 40 CFR 63.7515(d), 40 CFR 7540(a)(10), (11) and (13), and Table 3 of 40 CFR 63 Subpart DDDDD)

188. **Tune-Up: Every Year** - For Boilers listed under Group 1 in Attachment D, you must conduct a performance tune-up annually, following the specifications in Condition 186.a through f. Each annual tune-up must be conducted no more than 13 months after the previous tune-up. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

(9 VAC 5-80-110, 40 CFR 63.7500(a)(1), 40 CFR 63.7515(d), 40 CFR 7540(a)(10) and (13), and Table 3 of 40 CFR 63 Subpart DDDDD)

189. **Monitoring** – For Boilers 1R, 2R and 5, you must install, operate, and maintain an oxygen analyzer system, as defined in 40 CFR 63.7575, or install, certify, operate and maintain continuous emission monitoring systems (CEMS) for CO and oxygen (or carbon dioxide (CO<sub>2</sub>)) as follows:

- a. Complete a minimum of one cycle of CO and oxygen (or CO<sub>2</sub>) CEMS operation (sampling, analyzing, and data recording) for each successive 15-minute period. Collect

CO and oxygen (or CO<sub>2</sub>) data concurrently. Collect at least four CO and oxygen (or CO<sub>2</sub>) CEMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CEMS calibration, quality assurance, or maintenance activities are being performed.

- b. Reduce the CO CEMS data as specified in 40 CFR 63.8(g)(2).
- c. Calculate one-hour arithmetic averages, corrected to 3 percent oxygen (or corrected to an CO<sub>2</sub> percentage determined to be equivalent to 3 percent oxygen) from each hour of CO CEMS data in parts per million CO concentration. The one-hour arithmetic averages required shall be used to calculate the 30-day or 10-day rolling average emissions. Use Equation 19-19 in section 12.4.1 of Method 19 of 40 CFR Part 60, Appendix A-7 for calculating the average CO concentration from the hourly values.
- d. For purposes of collecting CO data, operate the CO CEMS as specified in 40 CFR 63.7535(b). You must use all the data collected during all periods in calculating data averages and assessing compliance, except that you must exclude certain data as specified in 40 CFR 63.7535(c). Periods when CO data are unavailable may constitute monitoring deviations as specified in 40 CFR 63.7535(d).

(9 VAC 5-80-110 and 40 CFR 63.7525(a))

190. **Monitoring** - If you combust ultra-low sulfur liquid fuel (distillate oil that has less than or equal to 15 ppm sulfur) in Boilers 3R, 4R, and 6, you do not need to conduct further performance tests (stack tests or fuel analyses) if the pollutants measured during the initial compliance performance tests meet the emission limits in Condition 178 providing you demonstrate ongoing compliance with the emissions limits by monitoring and recording the type of fuel combusted on a monthly basis. If you intend to use a fuel other than ultra-low sulfur liquid fuel, natural gas, refinery gas, or other gas 1 fuel as defined in 40 CFR 63.7575, you must conduct new performance tests within 60 days of burning the new fuel type.

(9 VAC 5-80-110 and 40 CFR 63.7515(h))

191. **Monitoring** – For Boilers 1R, 2R and 5, if you elect to use an SO<sub>2</sub> CEMS to demonstrate continuous compliance with the HCl emission limit, you must install the monitor at the outlet of the boiler or process heater, downstream of all emission control devices, and you must install, certify, operate, and maintain the CEMS according to either 40 CFR 60 or 40 CFR 75.

- a. For on-going quality assurance, the SO<sub>2</sub> CEMS must meet either the applicable daily and quarterly requirements in Procedure 1 of appendix F of 40 CFR 60 or the applicable daily, quarterly, and semiannual or annual requirements in sections 2.1 through 2.3 of appendix B to 40 CFR 75, with the following addition: You must perform the linearity checks required in section 2.2 of appendix B to 40 CFR 75 if the SO<sub>2</sub> CEMS has a span value of 30 ppm or less.
- b. For purposes of collecting SO<sub>2</sub> data, you must operate the SO<sub>2</sub> CEMS as specified in 40 CFR 63.7535(b). You must use all the data collected during all periods in calculating data averages and assessing compliance, except that you must exclude certain data as

specified in 40 CFR 63.7535(c). Periods when SO<sub>2</sub> data are unavailable may constitute monitoring deviations as specified in 40 CFR 63.7535(d).

- c. Collect CEMS hourly averages for all operating hours on a 30-day rolling average basis.
- d. Use only unadjusted, quality-assured SO<sub>2</sub> concentration values in the emissions calculations; do not apply bias adjustment factors to the part 75 SO<sub>2</sub> data and do not use 40 CFR 75 substitute data values.

(9 VAC 5-80-110 and 40 CFR 63.7525(m))

192. **Monitoring** – For Boilers 1R, 2R and 5, you must install, calibrate, maintain, and continuously operate the bag leak detection system as specified in paragraphs (a) through (f) below:

- a. You must install a bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute PM loadings for each exhaust stack, roof vent, or compartment (e.g., for a positive pressure fabric filter) of the fabric filter;
- b. Conduct a performance evaluation of the bag leak detection system in accordance with your monitoring plan and consistent with the guidance provided in EPA-454/R-98-015 (incorporated by reference, see 40 CFR 63.14);
- c. Use a bag leak detection system certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter or less;
- d. Use a bag leak detection system equipped with a device to record continuously the output signal from the sensor;
- e. Use a bag leak detection system equipped with a system that will alert plant operating personnel when an increase in relative PM emissions over a preset level is detected. The alert must easily recognizable (e.g., heard or seen) by plant operating personnel; and
- f. Where multiple bag leak detectors are required, the system's instrumentation and alert may be shared among detectors.

(9 VAC 5-80-110 and 40 CFR 63.7525(j))

193. **Monitoring** – For Boilers 1R, 2R and 5, you must initiate corrective action within 1 hour of a bag leak detection system alert and complete corrective actions as soon as practical, and operate and maintain the fabric filter system such that the periods which would cause an alert are no more than 5 percent of the operating time during a 6-month period.

(9 VAC 5-80-110, 40 CFR 63.7530(b)(4)(vii) and 40 CFR 63.7540(a)(7))

194. **Testing** – Within 180 days of startup of Boiler 6, to demonstrate compliance with the applicable emission limits in Condition 178, the permittee must conduct performance tests according to 40 CFR 63.7520 and Table 5 of 40 CFR 63 Subpart DDDDD. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation and calibration of the device.

A 30 day notification, prior to the demonstration of continuous monitoring system's performance, and subsequent notifications shall be submitted to the DEQ.

(9 VAC 5-80-110, 40 CFR 63.7510(a) through (d), 40 CFR 63.7520, and 40 CFR 63.7525)

195. **Testing** – For Boiler 6, you must conduct all applicable performance tests according to 40 CFR 63.7520 on an annual basis, except as specified in Condition 190 and paragraphs (a) and (b) below. Annual performance tests must be completed no more than 13 months after the previous performance test, except as specified in paragraphs (a) and (b) below.

- a. If your performance tests for a given pollutant for at least 2 consecutive years show that your emissions are at or below 75 percent of the emission limit for the pollutant, and if there are no changes in the operation of the individual boiler or air pollution control equipment that could increase emissions, you may choose to conduct performance tests for the pollutant every third year. Each such performance test must be conducted no more than 37 months after the previous performance test. If you elect to demonstrate compliance using emission averaging under 40 CFR 63.7522, you must continue to conduct performance tests annually. The requirement to test at maximum chloride input level is waived unless the stack test is conducted for HCl. The requirement to test at maximum mercury input level is waived unless the stack test is conducted for mercury. The requirement to test at maximum TSM input level is waived unless the stack test is conducted for TSM.
- b. If a performance test shows emissions exceeded the emission limit or 75 percent of the emission limit (as specified in Conditions 178 and 183) for a pollutant, you must conduct annual performance tests for that pollutant until all performance tests over a consecutive 2-year period meet the required level (at or below 75 percent of the emission limit, as specified in Conditions 178 and 183).

(9 VAC 5-80-110, 40 CFR 63.7515(a) through (c) and 40 CFR 63.7520)

196. **Testing** – For Boilers 1R, 2R and 5, you must conduct all applicable performance tests according to 40 CFR 63.7520 on an annual basis, except as specified in paragraphs (a) and (b) below. Annual performance tests must be completed no more than 13 months after the previous performance test, except as specified in paragraphs (a) and (b) below.

- a. If your performance tests for a given pollutant for at least 2 consecutive years show that your emissions are at or below 75 percent of the emission limit for the pollutant, and if there are no changes in the operation of the individual boiler or air pollution control equipment that could increase emissions, you may choose to conduct performance tests for the pollutant every third year. Each such performance test must be conducted no more than 37 months after the previous performance test. If you elect to demonstrate compliance using emission averaging under 40 CFR 63.7522, you must continue to conduct performance tests annually. The requirement to test at maximum chloride input level is waived unless the stack test is conducted for HCl. The requirement to test at maximum mercury input level is waived unless the stack test is conducted for mercury. The requirement to test at maximum TSM input level is waived unless the stack test is conducted for TSM.

- b. If a performance test shows emissions exceeded the emission limit or 75 percent of the emission limit (as specified in Conditions 178 and 183) for a pollutant, you must conduct annual performance tests for that pollutant until all performance tests over a consecutive 2-year period meet the required level (at or below 75 percent of the emission limit, as specified in Conditions 178 and 183).

(9 VAC 5-80-110, 40 CFR 63.7515(a) through (c) and 40 CFR 63.7520)

- 197. **Testing** - You must conduct all performance tests according to 40 CFR 63.7(c), (d), (f), and (h) for Boiler 6. You must also develop a site-specific stack test plan according to the requirements in 40 CFR 63.7(c). You shall conduct all performance tests under such conditions as DEQ specifies to you based on the representative performance of each boiler or process heater for the period being tested. Upon request, you shall make available to DEQ such records as may be necessary to determine the conditions of the performance tests.

(9 VAC 5-80-110 and 40 CFR 63.7520(a))

- 198. **Testing** – For each subsequent performance test required in Condition 195, except as provided in Condition 190, you must conduct each performance test for Boiler 6 according to the requirements and under the specific conditions in Tables 5 and 7 to 40 CFR 63 Subpart DDDDD. You must conduct performance tests at representative operating load conditions while burning the type of fuel or mixture of fuels that has the highest content of chlorine and mercury and you must demonstrate initial compliance and establish your operating limits based on these performance tests. These requirements could result in the need to conduct more than one performance test. Following each performance test and until the next performance test, you must maintain the 30-day rolling average operating load of each unit such that it does not exceed 110 percent of the highest hourly average operating load recorded during the performance test.

(9 VAC 5-80-110, 40 CFR 63.7520(b) and (c) and Tables 4, 5 and 7 to 40 CFR 63 Subpart DDDDD)

- 199. **Testing** - You must conduct each performance test for Boilers 1R, 2R and 5 according to the requirements and under the specific conditions in Tables 5 and 7 to 40 CFR 63 Subpart DDDDD. You must conduct performance tests at representative operating load conditions while burning the type of fuel or mixture of fuels that has the highest content of chlorine and mercury and you must demonstrate initial compliance and establish your operating limits based on these performance tests. These requirements could result in the need to conduct more than one performance test. Following each performance test and until the next performance test, you must maintain the 30-day rolling average operating load of each unit such that it does not exceed 110 percent of the highest hourly average operating load recorded during the performance test.

(9 VAC 5-80-110, 40 CFR 63.7520(b) and (c) and Tables 4, 5 and 7 to 40 CFR 63 Subpart DDDDD)

200. **Records** - The permittee shall maintain records of emissions data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. A copy of each notification and report that you submitted to comply with 40 CFR 63 Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv);
  - b. Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii);
  - c. For the bag leak detection system:
    - i. The date, time, and duration of each alert, the time corrective action was initiated and completed, and a brief description of the cause of the alert and the corrective action taken.
    - ii. The percent of the operating time during each 6-month period that the conditions exist for an alert. In calculating this operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alert time is counted. If corrective action is required, each alert shall be counted as a minimum of 1 hour. If you take longer than 1 hour to initiate corrective action, the alert time shall be counted as the actual amount of time taken to initiate corrective action.
  - d. For each CEMS and CMS: all required measurements needed to demonstrate compliance with 40 CFR 63 Subpart DDDDD (including, but not limited to, 15-minute averages of CMS data, raw performance testing measurements, and raw performance evaluation measurements, that support data that the source is required to report);
  - e. All results of performance tests and CMS performance evaluations;
  - f. All measurements as may be necessary to determine the conditions of performance tests and performance evaluations;
  - g. All CMS calibration checks;
  - h. All adjustments and maintenance performed on CMS;
  - i. Previous (i.e., superseded) versions of the performance evaluation plan;
  - j. Requests for alternatives to relative accuracy test for CEMS as required in 40 CFR 63.8(f)(6)(i);
  - k. Records of the date and time that each deviation started and stopped;
  - l. For Boilers 1R, 2R and 5, you must keep the records required in Table 8 to 40 CFR 63 Subpart DDDDD including records of all monitoring data and calculated averages for applicable operating limits, such as opacity, pressure drop, pH, and operating load, to



show continuous compliance with each emission limit and operating limit that applies to you. The records shall include, but not be limited to:

- i 30-day rolling average operating load;
- ii 30-day rolling average SO<sub>2</sub> CEMS emissions rate;

m. For Boilers 1R – 4R, 5 and 6:

- i You must keep records of monthly fuel use by each boiler or process heater, including the type(s) of fuel and amount(s) used.
- ii If, consistent with Condition 196, you choose to stack test less frequently than annually, you must keep a record that documents that your emissions in the previous stack test(s) were less than 75 percent of the applicable emission limit (or, in specific instances noted in Tables 1 and 2 or 11 through 13 to 40 CFR 63 Subpart DDDDD, less than the applicable emission limit), and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past year.
- iii Records of the occurrence and duration of each malfunction of the boiler or process heater, or of the associated air pollution control and monitoring equipment.
- iv Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 40 CFR 63.7500(a)(3), including corrective actions to restore the malfunctioning boiler or process heater, air pollution control, or monitoring equipment to its normal or usual manner of operation.
- v You must maintain records of the calendar date, time, occurrence and duration of each startup and shutdown.
- vi You must maintain records of the type(s) and amount(s) of fuels used during each startup and shutdown.

n. For Boilers 1R, 2R and 5: If you elect to use efficiency credits from energy conservation measures to demonstrate compliance according to 40 CFR 63.7533, you must keep a copy of the Implementation Plan required in 40 CFR 63.7533(d) and copies of all data and calculations used to establish credits according to 40 CFR 63.7533(b), (c), and (f).

Your records must be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1). As specified in 40 CFR 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. You must keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). You can keep the records off site for the remaining 3 years.

(9 VAC 5-80-110, 40 CFR 63.7540(a)(7), 40 CFR 63.7555 and 40 CFR 63.7560)

201. **Reports** - You must submit each report in Table 9 to 40 CFR 63 Subpart DDDDD that applies to you. Boilers 1R-4R, 5, and 6 are subject to semi-annual compliance reporting. For boilers listed in Attachment D, you may submit only an annual, biennial, or 5-year compliance report, as applicable, as specified in a through d below, instead of a semi-annual compliance report.
- a. The first semi-annual compliance report must cover the period beginning upon startup of the applicable unit and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date. The first annual, biennial, or 5-year compliance report must cover the period beginning upon startup of the applicable unit and ending on December 31 within 1, 2, or 5 years, as applicable.
  - b. The first semi-annual compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the date specified in (a) above. The first annual, biennial, or 5-year compliance report must be postmarked or submitted no later than January 31.
  - c. Each subsequent semi-annual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual, biennial, and 5-year compliance reports must cover the applicable 1-, 2-, or 5-year periods from January 1 to December 31.
  - d. Each subsequent semi-annual compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Annual, biennial, and 5-year compliance reports must be postmarked or submitted no later than January 31.

(9 VAC 5-80-110, 40 CFR 63.7495 and 40 CFR 63.7550(b))

202. **Reports** – For Boilers 1R – 4R, 5, 6, and boilers listed in Attachment D, a compliance report must contain the following information:
- a. Company and Facility name and address.
  - b. Process unit information, emissions limitations, and operating parameter limitations.
  - c. Date of report and beginning and ending dates of the reporting period.
  - d. Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual, biennial, or 5-year tune-up according to Conditions 186, 187 and 188. Include the date of the most recent burner inspection if it was not done annually, biennially, or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown.
  - e. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(9 VAC 9-80-110 and 40 CFR 63.7550(c)(1))

203. **Reports** - If you are complying with an emissions limit in Condition 178 with performance testing you must submit a compliance report with the following information;

- a. Company and Facility name and address.
- b. Process unit information, emissions limitations, and operating parameter limitations.
- c. Date of report and beginning and ending dates of the reporting period.
- d. The total fuel use by each individual boiler subject to an emission limit within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by the EPA or your basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure.
- e. If you are conducting performance tests once every 3 years consistent with 40 CFR 63.7515(b) or (c), the date of the last 2 performance tests and a statement as to whether there have been any operational changes since the last performance test that could increase emissions.
- f. A statement indicating that you burned no new types of fuel in an individual boiler subject to an emission limit. Or, if you did burn a new type of fuel and are subject to a HCl emission limit, you must submit the calculation of chlorine input, using Equation 7 of 40 CFR 63.7530, that demonstrates that your source is still within its maximum chlorine input level established during the previous performance testing. If you burned a new type of fuel and are subject to a mercury emission limit, you must submit the calculation of mercury input, using Equation 8 of 40 CFR 63.7530, that demonstrates that your source is still within its maximum mercury input level established during the previous performance testing. If you burned a new type of fuel and are subject to a TSM emission limit, you must submit the calculation of TSM input, using Equation 9 of 40 CFR 63.7530, that demonstrates that your source is still within its maximum TSM input level established during the previous performance testing.
- g. If you wish to burn a new type of fuel in an individual boiler subject to an emission limit and you cannot demonstrate compliance with the maximum chlorine input operating limit using Equation 7 of 40 CFR 63.7530 or the maximum mercury input operating limit using Equation 8 of 40 CFR 63.7530, or the maximum TSM input operating limit using Equation 9 of 40 CFR 63.7530 you must include in the compliance report a statement indicating the intent to conduct a new performance test within 60 days of starting to burn the new fuel.
- h. If there are no deviations from any emission limits or operating limits in this subpart that apply to you, a statement that there were no deviations from the emission limits or operating limits during the reporting period.
- i. If a malfunction occurred during the reporting period, the report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions

taken by you during a malfunction of a boiler or associated air pollution control device or CMS to minimize emissions in accordance with 40 CFR 63.7500(a)(3), including actions taken to correct the malfunction.

- j. If you plan to demonstrate compliance by emission averaging, certify the emission level achieved or the control technology employed is no less stringent than the level or control technology contained in the notification of compliance status in 40 CFR 63.7545(e)(5)(i).
- k. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
- l. For each instance of startup or shutdown include the information required to be monitored, collected, or recorded according to the requirements of 40 CFR 63.7555(d).
- m. The information required in Condition 205, if applicable.

(9 VAC 5-80-110 and 40 CFR 63.7550(c)(3))

204. **Reports** - If you are complying with an emissions limit in Condition 178 using a CMS the compliance report must contain the information required below:

- a. Company and Facility name and address.
- b. Process unit information, emissions limitations, and operating parameter limitations.
- c. Date of report and beginning and ending dates of the reporting period.
- d. If you use a CMS, including CEMS, COMS, or CPMS, you must include the monitoring equipment manufacturer(s) and model numbers and the date of the last CMS certification or audit.
- e. The total fuel use by each individual boiler subject to an emission limit within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by the EPA or your basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure.
- f. If there are no deviations from any emission limits or operating limits in this subpart that apply to you, a statement that there were no deviations from the emission limits or operating limits during the reporting period.
- g. If there were no deviations from the monitoring requirements including no periods during which the CMSs, including CEMS, COMS, and CPMS, were out of control as specified in 40 CFR 63.8(c)(7), a statement that there were no deviations and no periods during which the CMS were out of control during the reporting period.
- h. If a malfunction occurred during the reporting period, the report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions

taken by you during a malfunction of a boiler or associated air pollution control device or CMS to minimize emissions in accordance with 40 CFR 63.7500(a)(3), including actions taken to correct the malfunction.

- i. If you plan to demonstrate compliance by emission averaging, certify the emission level achieved or the control technology employed is no less stringent than the level or control technology contained in the notification of compliance status in 40 CFR 63.7545(e)(5)(i).
- j. For each reporting period, the compliance reports must include all of the calculated 30 day rolling average values for CEMS (CO, HCl, SO<sub>2</sub>, and mercury), 10 day rolling average values for CO CEMS when the limit is expressed as a 10 day instead of 30 day rolling average, and the PM CPMS data.
- k. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
- l. For each instance of startup or shutdown include the information required to be monitored, collected, or recorded according to the requirements of 40 CFR 63.7555(d).
- m. The information required in Condition 206, if applicable.

(9 VAC 5-80-110 and 40 CFR 63.7550(c)(4))

205. **Reports** - For each deviation from an emission limit or operating limit in 40 CFR 63 Subpart DDDDD that occurs at an individual boiler or process heater where you are not using a CMS to comply with that emission limit or operating limit, or from the work practice standards for periods of startup and shutdown, the compliance report must additionally contain the information required in (a) through (c) below.

- a. A description of the deviation and which emission limit, operating limit, or work practice standard from which you deviated.
- b. Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken.
- c. If the deviation occurred during an annual performance test, provide the date the annual performance test was completed.

(9 VAC 5-80-110 and 40 CFR 63.7550(d))

206. **Reports** - For each deviation from an emission limit, operating limit, and monitoring requirement in 40 CFR 63 Subpart DDDDD occurring at an individual boiler or process heater where you are using a CMS to comply with that emission limit or operating limit, the compliance report must additionally contain the information required in paragraphs (a)

through (i) below. This includes any deviations from your site-specific monitoring plan as required in Condition 184.

- a. The date and time that each deviation started and stopped and description of the nature of the deviation (i.e., what you deviated from).
- b. The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.
- c. The date, time, and duration that each CMS was out of control, including the information in 40 CFR 63.8(c)(8).
- d. The date and time that each deviation started and stopped.
- e. A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.
- f. A characterization of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.
- g. A summary of the total duration of CMS's downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period.
- h. A brief description of the source for which there was a deviation.
- i. A description of any changes in CMSs, processes, or controls since the last reporting period for the source for which there was a deviation.

(9 VAC 5-80-110 and 40 CFR 63.7550(e))

207. **Reports** - You must submit the reports for the boilers according to the procedures specified in paragraphs (a) through (c) below.

- a. Within 60 days after the date of completing each performance test (as defined in 40 CFR 63.2) required by Conditions 183, 184 or 196, you must submit the results of the performance tests, including any fuel analyses, following the procedure specified in either paragraph a.i or a.ii below.
  - i. For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (<http://www.epa.gov/ttn/chief/ert/index.html>), you must submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>.) Performance test data must be submitted in a file format generated through use of the EPA's ERT or an electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site. If you claim that some of the performance test information being submitted is confidential business information (CBI), you must submit a complete

file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

- ii For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the test, you must submit the results of the performance test to the Administrator at the appropriate address listed in 40 CFR 63.13.
- b. Within 60 days after the date of completing each SO<sub>2</sub> CEMS performance evaluation (as defined in 40 CFR 63.2), you must submit the results of the performance evaluation following the procedure specified in either paragraph b.i or b.ii below.
  - i For performance evaluations of continuous monitoring systems measuring relative accuracy test audit (RATA) pollutants that are supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the evaluation, you must submit the results of the performance evaluation to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) Performance evaluation data must be submitted in a file format generated through the use of the EPA's ERT or an alternate file format consistent with the XML schema listed on the EPA's ERT Web site. If you claim that some of the performance evaluation information being transmitted is CBI, you must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.
  - ii For any performance evaluations of continuous monitoring systems measuring RATA pollutants that are not supported by the EPA's ERT as listed on the ERT Web site at the time of the evaluation, you must submit the results of the performance evaluation to EPA at the appropriate address listed in 40 CFR 63.13.
- c. You must submit all reports required by Table 9 of this subpart electronically to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) You must use the appropriate electronic report in CEDRI for 40 CFR 63 Subpart DDDDD. Instead of using the electronic report in CEDRI for Subpart DDDDD, you may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site (<http://www.epa.gov/ttn/chief/cedri/index.html>), once the XML schema is available. If the reporting form specific to 40 CFR 63 Subpart DDDDD is not available in CEDRI at the time that the report is due, you must submit the report to EPA at the appropriate

address listed in 40 CFR 63.13. You must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI.

(9 VAC 5-80-110 and 40 CFR 63.7550(h))



## Insignificant Emission Units

208. **Insignificant Emission Units** - The following emission units at the facility are identified in the application as insignificant emission units under 9 VAC 5-80-720:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
0334-1-01	Natural gas fired micro-turbine	9 VAC 5-80-720 B	NO <sub>x</sub> , VOC, and PM	30 kW
0334-2-01	Liquid fired micro-turbine	9 VAC 5-80-720 B	NO <sub>x</sub> , VOC, and PM	30 kW
0121-ICU-01	Natural gas fired dehumidifier, Stulz Air Technology Systems, Model SDS-4000-122-G	9 VAC 5-80-720 C	--	230,000 BTU/hr
0121-ICU-02	Natural gas fired dehumidifier, Stulz Air Technology Systems, Model SDS-4000-122-G	9 VAC 5-80-720 C	--	279,072 BTU/hr
0121-ICU-03	Natural gas fired dehumidifier, Stulz Air Technology Systems, Model SDS-8000-152-G	9 VAC 5-80-720 C	--	574,416 BTU/hr
0204-ICU-01	Natural gas combustion unit (humidifier) DriSteem GTS-600	9 VAC 5-80-720 C	--	600,000 BTU/hr
0207-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,500,000 BTU/hr
0207-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,500,000 BTU/hr
0223-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	212,000 BTU/hr
0227-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	125,000 BTU/hr
0227-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	75,000 BTU/hr
0227-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
0227-ICU-04	Natural gas combustion unit	9 VAC 5-80-720 C	--	125,000 BTU/hr
0227-ICU-05	Natural gas combustion unit	9 VAC 5-80-720 C	--	125,000 BTU/hr
0227-ICU-06	Natural gas combustion unit	9 VAC 5-80-720 C	--	125,000 BTU/hr
0227-ICU-07	Natural gas combustion unit	9 VAC 5-80-720 C	--	125,000 BTU/hr
0227-ICU-08	Natural gas combustion unit	9 VAC 5-80-720 C	--	75,000 BTU/hr
0227-ICU-09	Natural gas combustion unit	9 VAC 5-80-720 C	--	50,000 BTU/hr
0254-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,400,000 BTU/hr
0254-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,400,000 BTU/hr
0255-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	200,000 BTU/hr
0255-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	38,500 BTU/hr
0255-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,650,000 BTU/hr
0255-ICU-04	Natural gas combustion unit	9 VAC 5-80-720 C	--	30,000 BTU/hr
0257-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	75,000 BTU/hr
0257-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	75,000 BTU/hr
0257-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	75,000 BTU/hr

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
0257-ICU-04	Natural gas combustion unit	9 VAC 5-80-720 C	--	75,000 BTU/hr
0257-ICU-05	Natural gas combustion unit	9 VAC 5-80-720 C	--	75,000 BTU/hr
0257-ICU-06	Natural gas combustion unit	9 VAC 5-80-720 C	--	75,000 BTU/hr
0257-ICU-07	Natural gas combustion unit	9 VAC 5-80-720 C	--	75,000 BTU/hr
0257-ICU-08	Natural gas combustion unit	9 VAC 5-80-720 C	--	75,000 BTU/hr
0263-ICU-01	#2 Fuel oil & Natural gas combustion unit	9 VAC 5-80-720 C	--	797,000 BTU/hr
0317-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	93,000 BTU/hr
0317-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	93,000 BTU/hr
0317-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	74,000 BTU/hr
0325-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	80,000 BTU/hr
0329-ICU-01	Liquid Propane combustion unit	9 VAC 5-80-720 C	--	62,000 BTU/hr
0331-ICU-01	#2 Fuel oil combustion unit	9 VAC 5-80-720 C	--	254,000 BTU/hr
0334-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,000,000 BTU/hr
0356-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	700,000 BTU/hr
0373-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	700,000 BTU/hr
0396-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,500,000 BTU/hr
0396-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,500,000 BTU/hr
0436-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	88,000 BTU/hr
0436-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	88,000 BTU/hr
0436-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	152,000 BTU/hr
0439-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	150,000 BTU/hr
0439-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	150,000 BTU/hr
0441-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	422,400 BTU/hr
0481-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
0481-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
0550-ICU-04	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,000 BTU/hr
0550-ICU-05	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,000 BTU/hr
0550-ICU-06	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,000 BTU/hr
0550-ICU-07	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,000 BTU/hr
0556-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,000 BTU/hr
0556-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,000 BTU/hr
0556-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,000 BTU/hr
0558-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	60,000 BTU/hr
0558-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	240,000 BTU/hr
0558-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	240,000 BTU/hr
0558-ICU-04	Natural gas combustion unit	9 VAC 5-80-720 C	--	528,000 BTU/hr
0558-ICU-05	Natural gas combustion unit	9 VAC 5-80-720 C	--	375,000 BTU/hr
0558-ICU-06	Natural gas combustion unit	9 VAC 5-80-720 C	--	375,000 BTU/hr
0558-ICU-07	Natural gas combustion unit	9 VAC 5-80-720 C	--	260,000 BTU/hr
0558-ICU-08	Natural gas combustion unit	9 VAC 5-80-720 C	--	260,000 BTU/hr
0558-ICU-09	Natural gas combustion unit	9 VAC 5-80-720 C	--	260,000 BTU/hr

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
0580-ICU-01	Natural gas combustion unit Patterson Kelly C-900LNX	9 VAC 5-80-720 C	--	900,000 BTU/hr
0583-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	120,000 BTU/hr
0583-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	200,000 BTU/hr
0583-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	150,000 BTU/hr
0583-ICU-04	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
0583-ICU-05	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
0583-ICU-06	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
0583-ICU-07	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
0583-ICU-08	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
0583-ICU-09	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
0583-ICU-10	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
0583-ICU-11	Natural gas combustion unit	9 VAC 5-80-720 C	--	90,000 BTU/hr
0583-ICU-12	Natural gas combustion unit	9 VAC 5-80-720 C	--	90,000 BTU/hr
0583-ICU-13	Natural gas combustion unit	9 VAC 5-80-720 C	--	40,000 BTU/hr
0583-ICU-14	Natural gas combustion unit	9 VAC 5-80-720 C	--	39,500 BTU/hr
0583-ICU-15	Natural gas combustion unit	9 VAC 5-80-720 C	--	250,000 BTU/hr
0583-ICU-16	Natural gas combustion unit	9 VAC 5-80-720 C	--	250,000 BTU/hr
0583-ICU-17	Natural gas combustion unit	9 VAC 5-80-720 C	--	250,000 BTU/hr
0594-ICU-01	Natural gas combustion unit Patterson Kelly CM-300	9 VAC 5-80-720 C	--	300,000 BTU/hr
0594-ICU-02	Natural gas combustion unit Patterson Kelly CM-300	9 VAC 5-80-720 C	--	300,000 BTU/hr
0595-ICU-01	Natural gas combustion unit Lochinvar PFN1000PM	9 VAC 5-80-720 C	--	1,000,000 BTU/hr
0596-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	835,000 BTU/hr
0627-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	173,900 BTU/hr
0800-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	299,000 BTU/hr
1602-ICU-01	Natural gas combustion unit (hot water heater)	9 VAC 5-80-720 C	--	800,000 BTU/hr
1602-ICU-02	Natural gas combustion unit (hot water heater)	9 VAC 5-80-720 C	--	800,000 BTU/hr
1602-ICU-03	Natural gas combustion unit (humidifier)	9 VAC 5-80-720 C	--	630,000 BTU/hr
1602-ICU-04	Natural gas combustion unit (humidifier)	9 VAC 5-80-720 C	--	630,000 BTU/hr
1602-ICU-05	Natural gas combustion unit (humidifier)	9 VAC 5-80-720 C	--	591,150 BTU/hr
1602-ICU-06	Natural gas combustion unit (humidifier)	9 VAC 5-80-720 C	--	591,150 BTU/hr
1626-ICU-01	#2 Fuel oil combustion unit	9 VAC 5-80-720 C	--	620,000 BTU/hr
1628-ICU-01	#2 Fuel oil combustion unit	9 VAC 5-80-720 C	--	125,000 BTU/hr

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
1756-ICU-01	Natural gas combustion unit Lochinvar CHN0991	9 VAC 5-80-720 C	--	990,000 BTU/hr
1756-ICU-02	Natural gas combustion unit Bradford White	9 VAC 5-80-720 C	--	300,000 BTU/hr
1760-ICU-01	Natural gas combustion unit Ventura 100 V 250	9 VAC 5-80-720 C	--	1,000,000 BTU/hr
1760-ICU-02	Natural gas combustion unit Ventura 100 V 250	9 VAC 5-80-720 C	--	1,000,000 BTU/hr
1760-ICU-03	Natural gas combustion unit Ventura 100 V 250	9 VAC 5-80-720 C	--	1,000,000 BTU/hr
1998-ICU-01	Natural gas boiler	9 VAC 5-80-720 C	--	670,000 BTU/hr
2132-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	702,000 BTU/hr
2132-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	36,000 BTU/hr
2145-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	455,000 BTU/hr
2145-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	36,000 BTU/hr
2167-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	180,000 BTU/hr
2200-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	396,600 BTU/hr
2333-ICU-01	Propane combustion unit	9 VAC 5-80-720 C	--	534,000 BTU/hr
2335-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2336-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2337-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2338-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	135,000 BTU/hr
2339-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2340-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2341-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2342-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2343-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2345-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	299,000 BTU/hr
2346-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	352,000 BTU/hr
2346-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	440,000 BTU/hr
2347-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	352,000 BTU/hr
2348-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2349-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2350-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2351-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2352-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2353-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2354-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2367-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2367-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2367-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2367-ICU-04	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2367-ICU-05	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
2381-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,000,000 BTU/hr
2385-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,000,000 BTU/hr
2411-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2411-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,216,000 BTU/hr
2415-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,216,000 BTU/hr
2415-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	50,000 BTU/hr
2417-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,216,000 BTU/hr
2417-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	251,000 BTU/hr
2422-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	500,000 BTU/hr
2422-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	500,000 BTU/hr
2422-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,000 BTU/hr
2428-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	369,600 BTU/hr
2430-ICU-02	Natural gas hot water furnace	9 VAC 5-80-720 C	--	311,000 BTU/hr
2434-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	480,000 BTU/hr
2447-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	36,000 BTU/hr
2447-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	36,000 BTU/hr
2447-ICU-03	Natural gas combustion unit	9 VAC 5-80-720 C	--	120,000 BTU/hr
2448-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	38,000 BTU/hr
2448-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	240,000 BTU/hr
2566-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	750,000 BTU/hr
2605-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	125,000 BTU/hr
2606-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	100,000 BTU/hr
2607-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	140,000 BTU/hr
2616-ICU-01	#2 Fuel oil combustion unit	9 VAC 5-80-720 C	--	191,000 BTU/hr
2801-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2801-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2802-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2802-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2803-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2803-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2804-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2804-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2805-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2805-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2806-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2806-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2807-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2807-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2808-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2808-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2809-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2809-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2810-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
2810-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2811-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2811-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2812-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2812-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2813-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2813-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2814-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2814-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2815-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2815-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2816-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2816-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2817-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2817-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2818-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2818-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2819-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2819-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2820-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2820-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2821-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2821-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2822-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2822-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2823-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2823-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2824-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2824-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2825-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2825-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2826-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2826-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2827-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
2827-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2828-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	199,990 BTU/hr
2828-ICU-02	Natural gas combustion unit	9 VAC 5-80-720 C	--	650,000 BTU/hr
3480-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	316,800 BTU/hr
3708-ICU-01	Lochinvar FBN0751 Natural gas-fired condensing boiler	9 VAC 5-80-720 C	--	750,000 BTU/hr
3708-ICU-02	Lochinvar FBN0751 Natural gas-fired condensing boiler	9 VAC 5-80-720 C	--	750,000 BTU/hr
3760-ICU-01	Natural gas combustion unit	9 VAC 5-80-720 C	--	1,500,000 BTU/hr

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
	Lochinvar FBN1501			
3760-ICU-02	Natural gas combustion unit A.O. Smith BTH-500A 200	9 VAC 5-80-720 C	--	499,900 BTU/hr
3760-ICU-03	Natural gas combustion unit Forced air furnace	9 VAC 5-80-720 C	--	2,500,000 BTU/hr
3760-ICU-04	Natural gas combustion unit Forced air furnace	9 VAC 5-80-720 C	--	2,500,000 BTU/hr
3761-ICU-01	Natural gas combustion unit Turbopower 750 P 400A-TP	9 VAC 5-80-720 C	--	600,000 BTU/hr
3761-ICU-02	Natural gas combustion unit Turbopower 750 P 400A-TP	9 VAC 5-80-720 C	--	600,000 BTU/hr
5262-ICU-02	Nat. gas combustion unit A.O. Smith BTH 199 200	9 VAC 5-80-720 C	--	199,900 BTU/hr
5271-ICU-01	Natural gas combustion unit Lochinvar CWN0645PM	9 VAC 5-80-720 C	--	645,000 BTU/hr
5561-ICU-01	Natural gas combustion unit Lochinvar ERN402-A	9 VAC 5-80-720 C	--	399,999 BTU/hr
0228-IEG-02	CI emergency electric generator Cummins DFCE 5690919 SN I040690016 (<500 hr/yr) - Portable	9 VAC 5-80-720 C	--	400 kW
0230-IEG-01	CI emergency electric generator Olympian SN 01Y0000EN4P00113 (<500 hr/yr) - Portable	9 VAC 5-80-720 C	--	18 kW
0232-IEG-01	CI emergency electric generator ONAN Model D18P2 (<500 hr/yr) - Portable	9 VAC 5-80-720 C	--	100 kW
0238-IEG-01	CI emergency electric generator (<500 hr/yr) - Portable	9 VAC 5-80-720 C	--	20 kW
0256-IEG-01	CI emergency electric generator Onan 400 DFEB (<500 hrs/yr)	9 VAC 5-80-720 C	--	400 kW
1994-IEG-01	CI emergency electric generator (<500 hr/yr)	9 VAC 5-80-720 C	--	400 kW
0596-PRI-02	Printing operations	9 VAC 5-80-720 B	VOC	--

## Petroleum Storage Tanks

### Free-Standing Aboveground Storage Tanks

Emission Unit Number	Capacity in gallons	Tank Construction	Use	Fuel Stored	Citation	Pollutant Emitted (9 VAC 5-80-720 B)
A0126-2	275	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0228-1	550	Steel Diked	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0238-1	1,000	Steel DW	Motor fuel	Diesel	9 VAC 5-80-720 B	VOC
A0238-4	550	Steel DW	Motor Fuel	Gasoline	9 VAC 5-80-720 B	VOC
A0256-1	650	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0269-1	180	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0580-2	1,000	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0583-1	550	Steel SW	waste oil	waste oil	9 VAC 5-80-720 B	VOC
A0583-2	550	Steel	Motor fuel	Diesel	9 VAC 5-80-720 B	VOC
A0593-1	120	Steel DW	Fire Pump	Diesel	9 VAC 5-80-720 B	VOC
A0810-1	550	Steel DW	Motor Fuel	Diesel	9 VAC 5-80-720 B	VOC
A1148-1	100	Steel SW	fire pump	Diesel	9 VAC 5-80-720 B	VOC
A1155-2	2,000	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1626-1	1,000	Steel DW	Heating	#2 Fuel Oil	9 VAC 5-80-720 B	VOC
A1603-1	1,500	Steel DW	Heating	#2 Fuel Oil	9 VAC 5-80-720 B	VOC

### Underground Storage Tanks

Emission Unit Number	Capacity in gallons	Tank Construction	Use	Fuel Stored	Citation	Pollutant Emitted (9 VAC 5-80-720 B)
U0228-4	10,000	Steel coated with fiberglass	Motor fuel	Gasoline	9 VAC 5-80-720 B	VOC
U0231-2	2,000	ACT 100 DW	Heating	#2 Fuel Oil	9 VAC 5-80-720 B	VOC
U0263-2	2,000	ACT 100 DW	Heating	#2 Fuel Oil	9 VAC 5-80-720 B	VOC
U0331-1	550	ACT 100U Steel DW	Heating	Distillate Oil	9 VAC 5-80-720 B	VOC
U0583-1	10,000	STIP3	Motor fuel	Gasoline	9 VAC 5-80-720 B	VOC
U0583-2	10,000	Steel coated with fiberglass	Motor fuel	Diesel	9 VAC 5-80-720 B	VOC
U0631-2	1,000	ACT 100 DW	Heating	#2 Fuel Oil	9 VAC 5-80-720 B	VOC
U1142-2	4,000	Fiberglass	Generator	Diesel	9 VAC 5-80-720 B	VOC
U1143-2	1,500	ACT 100 DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
U1150-1	6,000	Fiberglass	Generator	Diesel	9 VAC 5-80-720 B	VOC
U1150-2	15,000	Fiberglass	Generator	Diesel	9 VAC 5-80-720 B	VOC
U1172-2	1,000	Fiberglass	Generator	Diesel	9 VAC 5-80-720 B	VOC
U1176-2	1,000	ACT 100 DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
U1181-2	550	Fiberglass	Generator	Diesel	9 VAC 5-80-720 B	VOC
U1196-2	1,000	Fiberglass	Generator	Diesel	9 VAC 5-80-720 B	VOC
U2616-2	1,000	ACT 100 DW	Heating	#2 Fuel Oil	9 VAC 5-80-720 B	VOC



<b>Emission Unit Number</b>	<b>Capacity in gallons</b>	<b>Tank Construction</b>	<b>Use</b>	<b>Fuel Stored</b>	<b>Citation</b>	<b>Pollutant Emitted (9 VAC 5-80-720 B)</b>
U5575-1	30,000	ACT 100U Steel DW	Massie Road Heat Plant Heating/Gen	Distillate Oil	9 VAC 5-80-720 B	VOC
U5575-2	30,000	ACT 100U Steel DW	Massie Road Heat Plant Heating/Gen	Distillate Oil	9 VAC 5-80-720 B	VOC
U7103-5	5,000	Fiberglass DW	For MHP generator	Distillate oil	9 VAC 5-80-720 B	VOC
U7103-9	25,000	ACT 100U Steel DW	For MHP boilers	Distillate Oil	9 VAC 5-80-720 B	VOC
U7103-10	25,000	ACT 100U Steel DW	For MHP boilers	Distillate Oil	9 VAC 5-80-720 B	VOC
U7103-11	25,000	ACT 100U Steel DW	For MHP boilers	Distillate Oil	9 VAC 5-80-720 B	VOC
U7103-12	25,000	ACT 100U Steel DW	For MHP boilers	Distillate Oil	9 VAC 5-80-720 B	VOC
U7533-5	20,000	Fiberglass DW	Boiler/Gen	#2 Fuel Oil	9 VAC 5-80-720 B	VOC

#### Above Ground Storage Tank Integral to Generators

<b>Emission Unit Number</b>	<b>Capacity in gallons</b>	<b>Tank Construction</b>	<b>Use</b>	<b>Fuel Stored</b>	<b>Citation</b>	<b>Pollutant Emitted (9 VAC 5-80-720 B)</b>
A0068-1	500	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0094-2	240	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0122-2	165	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0125-1	75	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0131-1	380	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0201-2	1,250	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0204-1	425	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0207-2	380	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0210-1	200	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0210-1R	2270	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0210-4	300	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0214-1	275	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0215-1	900	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0230-1	50	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0235-1	50	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0235-2	800	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0238-3	61	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0254-1	335	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0256-2R	2620	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0264-1	400	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0267-1	1,500	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0356-1	224	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0396-1	2,520	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0401-1	110	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0446-1	396	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0527-2	378	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC

<b>Emission Unit Number</b>	<b>Capacity in gallons</b>	<b>Tank Construction</b>	<b>Use</b>	<b>Fuel Stored</b>	<b>Citation</b>	<b>Pollutant Emitted (9 VAC 5-80-720 B)</b>
A0528-1	100	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0534-1	160	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0550-2	500	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0599-1	8,350	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A0800-1	290	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1142-1	940	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1142-2	5,880	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1146-1R	880	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1149-1	250	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1149-2	5,000	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1149-3	5,000	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1149-4	3,000	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1149-5	1,000	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1149-6	10,286	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1149-7	10,050	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1154-1	200	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1155-1	1100	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1157-2	1853	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1161-1	4,000	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1194-1	1,000	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1603-2	2,793	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1604-1	583	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1760-1	6,480	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1985-1	2,500	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1994-1	750	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A1998-1	2,000	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A2150-1	1,000	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A2217-1	639	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A2368-1	322	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A2371-1	660	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A2372-1	416	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A2373-1	416	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A2374-1	416	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A2375-1	575	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A2382-1	660	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A2462-1	112	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A3708-2	1853	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A3755-1	378	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A3758-1	275	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A3759-1	308	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A3760-1	228	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A3761-1	1,695	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A5271-1	250	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A5307-1	250	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC

Emission Unit Number	Capacity in gallons	Tank Construction	Use	Fuel Stored	Citation	Pollutant Emitted (9 VAC 5-80-720 B)
A5307-2	500	Steel SW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A5307-3	500	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A5502-1	189	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A5506-1	35	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A5577-1	140	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A7147-1	393	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A7185-1	2,400	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A7186-1	215	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
A7273-1	1,750	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC

#### Aboveground Day Tanks for Generators

Emission Unit Number	Capacity in gallons	Tank Construction	Use	Fuel Stored	Citation	Pollutant Emitted (9 VAC 5-80-720 B)
D0256-1	118	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1142-1	50	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1142-2	50	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1142-3	50	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1142-4	50	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1143-1	30	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1150-1	300	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1150-2	275	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1155-1	300	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1181-1	40	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1196-1	100	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D1196-2	50	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D5575-1	275	Steel DW	Generator	Distillate #2	9 VAC 5-80-720 B	VOC
D7103-2	300	Steel DW	Generator	Diesel	9 VAC 5-80-720 B	VOC
D7533-2	120	Steel DW	Generator	Distillate #2	9 VAC 5-80-720 B	VOC

These emission units are presumed to be in compliance with all requirements of the federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping, or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

## Permit Shield & Inapplicable Requirements

209. **Permit Shield and Inapplicable Requirements** – Compliance with the provisions of this permit shall be deemed compliance with all applicable requirements in effect as of the permit issuance date as identified in this permit. This permit shield covers only those applicable requirements covered by terms and conditions in this permit and the following requirements which have been specifically identified as being not applicable to this permitted facility:

Citation	Title of Citation	Description of Applicability
None Identified	-	-

Nothing in this permit shield shall alter the provisions of §303 of the federal Clean Air Act, including the authority of the administrator under that section, the liability of the owner for any violation of applicable requirements prior to or at the time of permit issuance, or the ability to obtain information by (i) the administrator pursuant to §114 of the federal Clean Air Act, (ii) the Board pursuant to §10.1-1314 or §10.1-1315 of the Virginia Air Pollution Control Law or (iii) the Department pursuant to §10.1-1307.3 of the Virginia Air Pollution Control Law.

(9 VAC 5-80-140)

## General Conditions

210. **Federal Enforceability** – All terms and conditions in this permit are enforceable by the administrator and citizens under the federal Clean Air Act, except those that have been designated as only state-enforceable.  
(9 VAC 5-80-110 N)
211. **Permit Expiration** – This permit has a fixed term of five years. The expiration date shall be the date five years from the date of issuance. Unless the owner submits a timely and complete application for renewal to the DEQ consistent with the requirements of 9 VAC 5-80-80, the right of the facility to operate shall be terminated upon permit expiration.  
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
212. **Permit Expiration** – The owner shall submit an application for renewal at least six months but no earlier than eighteen months prior to the date of permit expiration.  
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
213. **Permit Expiration** – If an applicant submits a timely and complete application for an initial permit or renewal under this section, the failure of the source to have a permit or the operation of the source without a permit shall not be a violation of Article 1, Part II of 9 VAC 5 Chapter 80, until the Board takes final action on the application under 9 VAC 5-80-150.  
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
214. **Permit Expiration** – No source shall operate after the time that it is required to submit a timely and complete application under subsections C and D of 9 VAC 5-80-80 for a renewal permit, except in compliance with a permit issued under Article 1, Part II of 9 VAC 5 Chapter 80.  
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
215. **Permit Expiration** – If an applicant submits a timely and complete application under section 9 VAC 5-80-80 for a permit renewal but the Board fails to issue or deny the renewal permit before the end of the term of the previous permit, (i) the previous permit shall not expire until the renewal permit has been issued or denied and (ii) all the terms and conditions of the previous permit, including any permit shield granted pursuant to 9 VAC 5-80-140, shall remain in effect from the date the application is determined to be complete until the renewal permit is issued or denied.  
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
216. **Permit Expiration** – The protection under subsections F 1 and F 5 (ii) of section 9 VAC 5-80-80 F shall cease to apply if, subsequent to the completeness determination made pursuant section 9 VAC 5-80-80 D, the applicant fails to submit by the deadline specified in writing by the Board any additional information identified as being needed to process the application.  
(9 VAC 5-80-80 B, C, and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)

217. **Recordkeeping and Reporting** – All records of monitoring information maintained to demonstrate compliance with the terms and conditions of this permit shall contain, where applicable, the following:

- a. The date, place as defined in the permit, and time of sampling or measurements.
- b. The date(s) analyses were performed.
- c. The company or entity that performed the analyses.
- d. The analytical techniques or methods used.
- e. The results of such analyses.
- f. The operating conditions existing at the time of sampling or measurement.

(9 VAC 5-80-110 F)

218. **Recordkeeping and Reporting** – Records of all monitoring data and support information shall be retained for at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

(9 VAC 5-80-110 F)

219. **Recordkeeping and Reporting** – The permittee shall submit the results of monitoring contained in any applicable requirement to DEQ no later than **March 1** and **September 1** of each calendar year. This report must be signed by a responsible official, consistent with 9 VAC 5-80-80 G, and shall include:

- a. The time period included in the report. The time periods to be addressed are January 1 to June 30 and July 1 to December 31.
- b. All deviations from permit requirements. For purposes of this permit, deviations include, but are not limited to:
  - i. Exceedance of emissions limitations or operational restrictions;
  - ii. Excursions from control device operating parameter requirements, as documented by continuous emission monitoring, periodic monitoring, or compliance assurance monitoring which indicates an exceedance of emission limitations or operational restrictions; or,
  - iii. Failure to meet monitoring, recordkeeping, or reporting requirements contained in this permit.
- c. If there were no deviations from permit conditions during the time period, the permittee shall include a statement in the report that “no deviations from permit requirements occurred during this semi-annual reporting period.”

(9 VAC 5-80-110 F)

220. **Annual Compliance Certification** – Exclusive of any reporting required to assure compliance with the terms and conditions of this permit or as part of a schedule of compliance contained in this permit, the permittee shall submit to EPA and DEQ no later than **March 1** each calendar year a certification of compliance with all terms and conditions of this permit including emission limitation standards or work practices. The compliance certification shall comply with such additional requirements that may be specified pursuant to §114(a)(3) and §504(b) of the federal Clean Air Act. This certification shall be signed by a responsible official, consistent with 9 VAC 5-80-80 G, and shall include:
- a. The time period included in the certification. The time period to be addressed is January 1 to December 31.
  - b. The identification of each term or condition of the permit that is the basis of the certification.
  - c. The compliance status.
  - d. Whether compliance was continuous or intermittent, and if not continuous, documentation of each incident of non-compliance.
  - e. Consistent with subsection 9 VAC 5-80-110 E, the method or methods used for determining the compliance status of the source at the time of certification and over the reporting period.
  - f. Such other facts as the permit may require to determine the compliance status of the source.

One copy of the annual compliance certification shall be submitted to EPA in electronic format only. The certification document should be sent to the following electronic mailing address:

[R3\\_APD\\_Permits@epa.gov](mailto:R3_APD_Permits@epa.gov)

(9 VAC 5-80-110 K.5)

221. **Permit Deviation Reporting** – The permittee shall notify the DEQ, within four daytime business hours after discovery, of any deviations from permit requirements which may cause excess emissions for more than one hour, including those attributable to upset conditions as may be defined in this permit. In addition, within 14 days of the discovery, the permittee shall provide a written statement explaining the problem, any corrective actions or preventative measures taken, and the estimated duration of the permit deviation. The occurrence should also be reported in the next semi-annual compliance monitoring report pursuant to General Condition 219 of this permit.

(9 VAC 5-80-110 F.2 and 9 VAC 5-80-250)

222. **Failure/Malfunction Reporting** – In the event that any affected facility or related air pollution control equipment fails or malfunctions in such a manner that may cause excess emissions for more than one hour, the owner shall, as soon as practicable but no later than four daytime business hours after the malfunction is discovered, notify the DEQ by facsimile transmission, telephone or telegraph of such failure or malfunction and shall within 14 days of discovery provide a written statement giving all pertinent facts, including the estimated duration of the breakdown. Owners subject to the requirements of 9 VAC 5-40-50 C and 9 VAC 5-50-50 C are not required to provide the written statement prescribed in this paragraph for facilities subject to the monitoring requirements of 9 VAC 5-40-40 and 9 VAC 5-50-40. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the owner shall notify the DEQ.  
(9 VAC 5-20-180 C)
223. **Severability** – The terms of this permit are severable. If any condition, requirement or portion of the permit is held invalid or inapplicable under any circumstance, such invalidity or inapplicability shall not affect or impair the remaining conditions, requirements, or portions of the permit.  
(9 VAC 5-80-110 G.1)
224. **Duty to Comply** – The permittee shall comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Air Act or the Virginia Air Pollution Control Law or both and is ground for enforcement action; for permit termination, revocation and reissuance, or modification; or, for denial of a permit renewal application.  
(9 VAC 5-80-110 G.2)
225. **Need to Halt or Reduce Activity not a Defense** – It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.  
(9 VAC 5-80-110 G.3)
226. **Permit Modification** – A physical change in, or change in the method of operation of, this stationary source may be subject to permitting under State Regulations 9 VAC 5-80-50, 9 VAC 5-80-1100, 9 VAC 5-80-1605, or 9 VAC 5-80-2000 and may require a permit modification and/or revisions except as may be authorized in any approved alternative operating scenarios.  
(9 VAC 5-80-190 and 9 VAC 5-80-260)
227. **Property Rights** – The permit does not convey any property rights of any sort, or any exclusive privilege.  
(9 VAC 5-80-110 G.5)
228. **Duty to Submit Information** – The permittee shall furnish to the Board, within a reasonable time, any information that the Board may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Board copies of records required to be kept by the permit and, for information claimed to be confidential, the permittee shall furnish such records to the Board along with a claim of



confidentiality.  
(9 VAC 5-80-110 G.6)

229. **Duty to Submit Information** – Any document (including reports) required in a permit condition to be submitted to the Board shall contain a certification by a responsible official that meets the requirements of 9 VAC 5-80-80 G.  
(9 VAC 5-80-110 K.1)

230. **Duty to Pay Permit Fees** – The owner of any source for which a permit under 9 VAC 5-80-50 through 9 VAC 5-80-300 was issued shall pay permit fees consistent with the requirements of 9 VAC 5-80-310 through 9 VAC 5-80-350. The actual emissions covered by the permit program fees for the preceding year shall be calculated by the owner and submitted to the DEQ by April 15 of each year. The calculations and final amount of emissions are subject to verification and final determination by the Department.  
(9 VAC 5-80-110 H and 9 VAC 5-80-340 C)

231. **Fugitive Dust Emission Standards** – During the operation of a stationary source or any other building, structure, facility, or installation, no owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions may include, but are not limited to, the following:

- a. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land;
- b. Application of asphalt, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which may create airborne dust; the paving of roadways and the maintaining of them in a clean condition;
- c. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty material. Adequate containment methods shall be employed during sandblasting or similar operations;
- d. Open equipment for conveying or transporting material likely to create objectionable air pollution when airborne shall be covered or treated in an equally effective manner at all times when in motion; and,
- e. The prompt removal of spilled or tracked dirt or other materials from paved streets and of dried sediments resulting from soil erosion.

(9 VAC 5-40-90 and 9 VAC 5-50-90)

232. **Startup, Shutdown, and Malfunction** – At all times, including periods of startup, shutdown, and soot blowing, and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are

being used will be based on information available to the Board, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

(9 VAC 5-50-20 E)

233. **Alternative Operating Scenarios** – Contemporaneously with making a change between reasonably anticipated operating scenarios identified in this permit, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating. The permit shield described in 9 VAC 5-80-140 shall extend to all terms and conditions under each such operating scenario. The terms and conditions of each such alternative scenario shall meet all applicable requirements including the requirements of 9 VAC 5 Chapter 80, Article 1.

(9 VAC 5-80-110 J)

234. **Inspection and Entry Requirements** – The permittee shall allow DEQ, upon presentation of credentials and other documents as may be required by law, to perform the following:

- a. Enter upon the premises where the source is located or emissions-related activity is conducted, or where records must be kept under the terms and conditions of the permit.
- b. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of the permit.
- c. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit.
- d. Sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(9 VAC 5-80-110 K.2)

235. **Reopening For Cause** – The permit shall be reopened by the Board if additional federal requirements become applicable to a major source with a remaining permit term of three years or more. Such reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 9 VAC 5-80-80 F.

- a. The permit shall be reopened if the Board or the administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
- b. The permit shall be reopened if the administrator or the Board determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

- c. The permit shall not be reopened by the Board if additional applicable state requirements become applicable to a major source prior to the expiration date established under 9 VAC 5-80-110 D.

(9 VAC 5-80-110 L)

- 236. **Permit Availability** – Within five days after receipt of the issued permit, the permittee shall maintain the permit on the premises for which the permit has been issued and shall make the permit immediately available to DEQ upon request.

(9 VAC 5-80-150 E)

- 237. **Transfer of Permits** – No person shall transfer a permit from one location to another, unless authorized under 9 VAC 5-80-130, or from one piece of equipment to another.

(9 VAC 5-80-160)

- 238. **Transfer of Permits** – In the case of a transfer of ownership of a stationary source, the new owner shall comply with any current permit issued to the previous owner. The new owner shall notify the Board of the change in ownership within 30 days of the transfer and shall comply with the requirements of 9 VAC 5-80-200.

(9 VAC 5-80-160)

- 239. **Transfer of Permits** – In the case of a name change of a stationary source, the owner shall comply with any current permit issued under the previous source name. The owner shall notify the Board of the change in source name within 30 days of the name change and shall comply with the requirements of 9 VAC 5-80-200.

(9 VAC 5-80-160)

- 240. **Permit Revocation or Termination for Cause** – A permit may be revoked or terminated prior to its expiration date if the owner knowingly makes material misstatements in the permit application or any amendments thereto or if the permittee violates, fails, neglects or refuses to comply with the terms or conditions of the permit, any applicable requirements, or the applicable provisions of 9 VAC 5 Chapter 80 Article 1. The Board may suspend, under such conditions and for such period of time as the Board may prescribe any permit for any grounds for revocation or termination or for any other violations of these regulations.

(9 VAC 5-80-190 C and 9 VAC 5-80-260)

- 241. **Duty to Supplement or Correct Application** – Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrections. An applicant shall also provide additional information as necessary to address any requirements that become applicable to the source after the date a complete application was filed but prior to release of a draft permit.

(9 VAC 5-80-80 E)

- 242. **Stratospheric Ozone Protection** – If the permittee handles or emits one or more Class I or II substances subject to a standard promulgated under or established by Title VI

(Stratospheric Ozone Protection) of the federal Clean Air Act, the permittee shall comply with all applicable sections of 40 CFR Part 82, Subparts A to F and H.

(40 CFR Part 82, Subparts A-F and H)

243. **Asbestos Requirements** – The permittee shall comply with the requirements of National Emissions Standards for Hazardous Air Pollutants (40 CFR 61) Subpart M, National Emission Standards for Asbestos as it applies to the following: Standards for Demolition and Renovation (40 CFR 61.145), Standards for Insulating Materials (40 CFR 61.148), and Standards for Waste Disposal (40 CFR 61.150).

(9 VAC 5-60-70 and 9 VAC 5-80-110 A.1)

244. **Accidental Release Prevention** – If the permittee has more, or will have more than a threshold quantity of a regulated substance in a process, as determined by 40 CFR 68.115, the permittee shall comply with the requirements of 40 CFR Part 68.

(40 CFR Part 68)

245. **Changes to Permits for Emissions Trading** – No permit revision shall be required under any federally approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.

(9 VAC 5-80-110 I)

246. **Emissions Trading** – Where the trading of emissions increases and decreases within the permitted facility is to occur within the context of this permit and to the extent that the regulations provide for trading such increases and decreases without a case-by-case approval of each emissions trade:

- a. All terms and conditions required under 9 VAC 5-80-110, except subsection N, shall be included to determine compliance.
- b. The permit shield described in 9 VAC 5-80-140 shall extend to all terms and conditions that allow such increases and decreases in emissions.
- c. The owner shall meet all applicable requirements including the requirements of 9 VAC 5-80-50 through 9 VAC 5-80-300.

(9 VAC 5-80-110 I)

## Attachment A

**UVA Boilers 1R, 2R and 5 – Particulate Matter (PM) Compliance Assurance Monitoring (CAM) Plan  
(Unit: 7103-1-01R, 7103-1-02R & 7103-1-05)**

Indicator	Indicator 1	Indicator 2
	Bag Leak Detection System	Bag Condition
<b>Measurement Approach</b>	Boilers 1R, 2R & 5 – Boilers 1R, 2R and 5 are each equipped with a baghouse. Each baghouse is required to have a bag leak detection system (BLDS) in accordance with 40 CFR 63 Subpart DDDDD.	The inspection and maintenance program includes an annual inspection of the baghouse and periodic bag replacement.
<b>Indicator Range</b>	An excursion is defined as any operating condition where the BLDS alarm is activated. BLDS alarm points shall be set as follows: (1) for the one-minute average BLDS response level, alarm shall sound when particulate readings reach two times the most recently-established site-specific typical cleaning peak value; and (2) for the hourly average BLDS response level, alarm shall sound when particulate readings reach three times the most recently-established site-specific baseline level. An excursion will trigger an investigation of the occurrence, corrective action, and a reporting requirement. If the investigation indicates that no corrective action to the baghouse is required, no alert time will be counted and no reporting is required.	An excursion is defined as failure to perform the annual inspection and bag replacement as recommended by the manufacturer's specifications. Excursions trigger an inspection, corrective action, and a reporting requirement.
<b>Quality Improvement Plan (QIP) Threshold</b>	Exceedance of five percent of the operating time for a semi-annual reporting period.	One excursion for an annual reporting period.
<b>Performance Criteria:</b>	<b>Data Representativeness</b> The leak detection system measures the performance of the baghouse directly and so is de facto representative of particulate emissions.	Bag samples evaluated on an annual basis for deterioration.
	<b>Verification of Operational Status</b> Installation according to 40 CFR 63.7525(j).	N/A
	<b>QA/QC Practices and Criteria</b> Performance evaluation per EPA-454/R-98-015 and certified by manufacturer to be capable of detecting PM emissions at 10 mg/m3 or less.	Trained personnel perform inspections and maintenance.
	<b>Monitoring Frequency</b> Continuous during baghouse operation.	Annual inspection of bag condition

Indicator	Indicator 1	Indicator 2
	Bag Leak Detection System	Bag Condition
Data Collection Procedure	DCS will record continuous output signal from sensors.	Results of inspections and maintenance activities are recorded on the corresponding work order form in the computerized maintenance management system.

## Attachment B



**MACT Group 1a:**

Existing Emergency Generators greater than 500 HP at Major Source of HAPs that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for Emergency Load Response Program (ELRP)

Ref. No.	Location	Manufacturer and/or Description	Date Installed (<12/19/02 - former TV units)	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
0068-1-01	Clark Hall	Kohler Model 500ROZD4 Detroit Diesel Engine	<12/19/2002	505	570	765
1142-2-01	Pinn Hall Addition	Onan Model 1500DFMB (G) Cummins Model KTTA50-G2 (E)	1993	1500	1655	2220
1148-1-01	Lee St Parking Garage - Hospital	Caterpillar SR4 (G) 3512 STD (E)	8/1/1985	910	1007	1350
1148-2-01	Lee St Parking Garage – Hospital	Caterpillar SR4 (G) 3512 STD TA (E)	8/1/1985	910	1007	1350
1148-3-01	Lee St Parking Garage – Hospital	Caterpillar SR4 (G) 3512 STD (E)	8/1/1985	910	920	1350
1148-4-01	Lee St Parking Garage – Hospital	Caterpillar SR4(G) 3512 (E)	8/1/1990	1000	1076	1443
1155-1-01	Biomed. Eng. & Med. Sci. Bldg (MR-5)	Onan DFLE-4492629 (G) Cummins Model KTA50-G9 (E)	<12/19/2002	1500	1665	2233
1196-1-01	Davis Transformer	Onan Model 500 DFFB (G) Cummins Model KTTA19-G2 (E)	<12/19/2002	500	625*	838*
3761-1-01	Aurbach Medical Research Bldg	Katolight Model D1000FRY4 (G) Mitsubishi Model S12H-PTA (E)	10/1/2001	1000	1080	1448
7103-2-01	Main Heat Plant	Caterpillar Model SR-4 (G) Caterpillar Model 3512 STD (E)	10/1/1986	1250	1345	1804

7185-1-01	South Chiller Plant	Kohler 1500ROZD4 (G) Detroit Diesel Model T1237K36 (E)	9/1/2001	1500	1641	2200
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\*Calculated value based on 80% efficiency from engine power to generator capacity.

Requirements:

§63.6590 (b)(3)(iii) – Does not have to meet the requirements of this subpart or subpart A, including initial notification requirements.

*Existing >500 HP @ Major HAP – Must have commenced construction before 12/19/02*

Still subject to Title V permitting (i.e. not insignificant) due to size.

### MACT Group 1b:

Existing Insignificant Emergency Generators greater than 500 HP at Major Source of HAPs

Ref. No.	Location	Manufacturer and/or Description	Date Installed (<12/19/02 - former TV units)	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
0256-IEG-01	Chemistry Addition	Onan Model 400DFEB (G) Cummins KTA19-62 (E)	<12/19/2002	400	500*	671*
1994-IEG-01	Jefferson Park Medical Office Bldg	Caterpillar Model SR4 (G) Caterpillar Model 3456 (E)	<12/19/2002	400	500*	671*

\*Calculated value based on 80% efficiency from engine power to generator capacity.

Requirements:

§63.6590 (b)(3)(iii) – Does not have to meet the requirements of this subpart or subpart A, including initial notification requirements.

*Existing >500 HP @ Major HAP – Must have commenced construction before 12/19/02*

Insignificant due to size (9 VAC 5-80-720(c)).

**MACT Group 2:**

Existing Compression Ignition (CI) Emergency Generators less than or equal to 500 HP at Major Source of HAPs that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for Emergency Load Response Program (ELRP).

Ref. No.	Location	Manufacturer and/or Description	Date Installed (<12/19/02 - former TV units)	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
0094-1-01	Bryan Hall	Kohler Model 125REOJB-GA7	4/1/2006	125	156*	210*
0125-1-01	Central Grounds Garage	Kohler Model 15ROZ81	<12/19/2002	15	15	20
0126-1-01	Clemons Library	Kohler Model 300REOZD (G) Detroit Diesel 6063MK35 (E)	7/1/2003	300	365	490
0207-1-01	Zehmer Hall	Olympian Model D230P1 (G) Perkins engine	<12/19/2002	230	288*	386*
0210-2-01	Gilmer Hall	Kohler Model 260RHOZ71	<12/19/2002	260	325*	436*
0210-3-01	Gilmer Hall	Generac 97A 04381S (G) Cat Model 3208 (E)	<12/19/2002	175	200.5	269
0228-1-01	Leake Bldg	Onan D60DGCB (G) Cummins 4BT3.9-G2 (E)	<12/19/2002	60	76	102
0356-1-01	High Energy Physics	Olympian Model D90P1 (G) Perkins engine	<12/19/2002	90	113*	151*
0401-1-01	Emmet-Ivy Parking Garage	Kohler Model 180REOZJB (G) John Deere 6081AF001 (E)	<12/19/2002	180	225*	302*
0528-1-01	Slaughter Hall ITC	Generac Model 20A04051-S (G) Generac engine part 92460 (E)	<12/19/2002	100	125*	168*
0534-1-01	JAG School Addition	Kohler Model 125ROZ271 (G) Model 6CT (E)	<12/19/2002	125	154	207

Attachment B  
Generator Groups

Ref. No.	Location	Manufacturer and/or Description	Date Installed (<12/19/02 - former TV units)	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
0551-1-01	Darden Classroom	Cummins Model DFCB-4962632 (G) Model NTA-855-G2 (E)	<12/19/2002	300	347	465
0800-1-01	Copeley Child Care Center	Kohler Model 150REOZJB (G) John Deere engine	1/1/2005	150	188*	251*
1142-3-01	Pinn Hall Vivarium	Generac Model 4863570100 SD230 (G) Model D12.0 (E)	9/1/2005	230	288*	386*
1143-1-01	Primary Care Center	Onan Model 230-0-DFM-17R-16896 (G) Model NTA-855-G (E)	<12/19/2002	250	313*	419*
1148-6-01	Lee Street Parking Garage	Cummins Fire Pump Model N-495-FP	<12/19/2002	NA	84	113
1154-1-01	South Parking Garage	Kohler Model 80R0ZJ (G) John Deere 6059T (E)	1999	91	111	150
1172-2-01	Multistory Bldg	Caterpillar Model SR4 (G) Model 3406PC (E)	<12/19/2002	260	325*	436*
1181-1-01	Medical School Bldg – Old Morgue	Newage Model D250FPJ4 (G) Model 6125A (E)	<12/19/2002	250	312*	419*
1196-2-01	Davis Transformer	Caterpillar Model D337F (G) Model 37B2541 (E)	<12/19/2002	150	188*	251*
2464-1-01	Lambeth Commons ITC	Olympian Model D60P3 (G) Perkins engine	<12/19/2002	60	75*	100*
3758-1-01	560 Ray C. Hunt Drive	Kohler 150ROZJ (G) John Deere Model 6081AF001C (E)	1999	150	187	250
3759-1-01	400 Ray C Hunt Drive	Olympian Model D150PI (G) Perkins engine	1/1/2004	150.4	188*	251*

Ref. No.	Location	Manufacturer and/or Description	Date Installed (<12/19/02 - former TV units)	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
5271-1-01	Aquatic Fitness Center	Kohler Model 100ROZJ71 (G) John Deere Model 6059TF (E)	<12/19/2002	100	123	165
5307-1-01	Scott Stadium (west)	Kohler Model 80ROZJ 4SL (G) John Deere Model 6059TF (E)	<12/19/2002	81	100*	134*
5307-2-01	Scott Stadium (south)	Kohler Model 300REOZD 4UA13 (G) Detroit Diesel Model S60 (E)	<12/19/2002	300	410	550
5307-3-01	Scott Stadium (east)	Kohler Model 350REOZD 4M4019 (G) Detroit Diesel Model S60 (E)	<12/19/2002	355	410	550
5502-1-01	Klockner Stadium	Generac Model SD080 (G) Mitsubishi 4D34-T (E)	10/2/2006	80	89	120
5506-1-01	Baseball Stadium	Kohler Model 15ROZ (G) Yanmar 4TNE84-EK (E)	4/5/2002	15	19.8	27

\*Calculated value based on 80% efficiency from engine power to generator capacity.

Requirements:

Subject to MACT.

*Existing ≤500 HP @ Major HAP – Must have commenced construction before 6/12/06*

MACT Requirements:

§63.6602 – Maintenance requirements in Table 2c

**MACT Group 3:**

New Emergency Generators greater than 500 HP at Major Source of HAPs that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for Emergency Load Response Program (ELRP).

Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
0201-1-01	O-Hill Dining Hall	Caterpillar (G) Caterpillar Model C27(E)	10/29/2013	750	905	1214
0210-1-01R	Gilmer Hall	Kohler Model 260RHOZ71	TBD	1,000	1099	1474
0215-1-01	Physical and Life Sciences Building	Caterpillar Model SR5 (G) Caterpillar Model C32 (E)	4/1/2011	1000	1120	1502
0256-2-01R	Chemistry Building	Caterpillar Model 3512C	11/20/2018	1500	1645	2206
0267-1-01	Wilsdorf Hall	Kohler 1000REOZDB (G) Detroit Diesel Engine	8/1/2006	1000	1115	1495
0396-1-01R	Runk Dining Hall	Caterpillar Model 3512C	7/12/2018	1500	1645	2206
0580-3-01	Carruthers Hall	Caterpillar Model LC7 (G) Caterpillar Model C18 (E)	11/17/2011	600	671	900
0599-1-01	University Data Center	Caterpillar (G) Caterpillar 3516CHD (E)	9/3/2010	2500	2710	3634
1142-1-01	Pinn Hall	Kohler 2000REOZMB (G) Mitsubishi S16R-Y2PTAW2-1 (E)	11/1/2010	2000	2180	2923
1146-1-01R	Emily Couric Clinical Cancer Center	Caterpillar Model C15	8/11/2019	500	568	762
1148-5-01	Lee Street Parking Garage- Hospital	Caterpillar Model SR4B (G) Caterpillar Model C32 (E)	8/1/2010	1000	1120	1502
1149-2-01	11 <sup>th</sup> Street Garage – South Chiller	Caterpillar (G) Caterpillar 3516CHD (E)	4/19/2011	2500	2710	3634

Attachment B  
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Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
1149-3-01	11 <sup>th</sup> Street Garage – South Chiller	Caterpillar (G) Caterpillar 3516CHD (E)	4/20/2011	2500	2710	3634
1149-4-01	11 <sup>th</sup> Street Garage – Battle Bldg.	Cummins DQGAB-1211506 (G) Cummins QSK50-G4 (E)	12/7/2012	1500	1655	2220
1149-6-01	11 <sup>th</sup> Street Garage - Hospital	Caterpillar Model 3512C	5/2/2018	1500	1645	2206
1149-7-01	11 <sup>th</sup> Street Garage - Hospital	Caterpillar Model 3512C	5/2/2018	1500	1645	2206
1157-1-01R	MR-4	Caterpillar Model 500 (G) Caterpillar Model C15 (E)	11/4/2016	500	645	864
1161-1-01	Carter-Harrison Research Building	Caterpillar Model SR4B-GD (G) Caterpillar Model 3516B (E)	8/1/2008	2000	2148	2880
1172-1-01	Multistory Bldg	Caterpillar Model LC7 (G) Caterpillar Model C18 (E)	7/1/2009	600	671	900
1194-1-01	Cobb Hall	Cummins Model DFGB (G) Cummins Model VTA28-G5 (E)	7/1/2005	600	671	900
1603-5-01	Ivy Mountain CUP	Kohler Model KD800 (G) Kohler Model KD27V12 (E)	TBD	800	891	1195
1760-1-01	Snyder Translational Research Bldg	Kohler Model 2000REOZMB (G) Mitsubishi S16R-Y2PTAW2-1 (E)	1/1/2008	2000	2180	2923
1985-1-01	Stacey Hall	Caterpillar Model SR4B-GD (G) Caterpillar Model C32 (E)	5/1/2007	1000	1122	1505
1998-1-01	UVA Clinical Laboratory	Caterpillar Model SR4B (G) Caterpillar Model 3412C (E)	5/1/2005	800	880	1180
2150-1-01	Bond House	Caterpillar Model C13	7/1/2019	350	402	539
2217-1-01	Hancock House	Caterpillar Model C13	3/14/2018	350	396	531

Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
2371-1-01	Ern Commons	Cummins Model DFEH (G) Cummins Model QSX15-G9 (E)	5/1/2011	400	563	755
3708-1-01R	UVA Endoscopy Monroe Lane	Caterpillar Model LC6 (G) Caterpillar Model C13 (E)	3/27/2017	400	448	601
5575-2-01	Massie Road Heat Plant	Cummins DQKC-5707858 (G) Cummins Model QSK60-G6 (E)	1/1/2006	2000	2179	2922
7103-3-01	Main Heat Plant	Caterpillar Model SR4B (G) Caterpillar Model 3516 (E)	7/1/2006	2000	2145	2876
7273-1-01	Alderman Road Pumping Station	Caterpillar (G) Caterpillar Model C15 (E)	4/15/2014	500	645	865
7533-2-01R	North Grounds Mechanical Plant	Caterpillar Model 350 (G) Caterpillar Model C15 (E)	5/28/2015	350	532	713

Requirements:

§63.6590 (b)(1)(i) – Does not have to meet the requirements of this subpart or subpart A, except for the initial notification requirements of §63.6645(f)

*New >500 HP @ Major HAP – Commenced construction on or after 12/19/02*

**MACT Group 4:**

New Emergency Generators less than or equal to 500 HP at Major Source of HAPs

Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
0122-1-01	Newcomb Hall	Kohler 40REOZJC (G) John Deere 4024HR285B (E)	9/10/2012	40	60	80



Attachment B  
Generator Groups

Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
0131-1-01	Elson Student Health	Caterpillar D150-8 (G) Caterpillar Model C6.6 (E)	9/1/2007	150	205	275
0204-1-01	Thornton Hall	Kohler 180REOZJD (G) John Deere 6068HF485T (E)	6/5/2008	180	235	315
0214-1-01	Rice Hall	Caterpillar (G) Caterpillar Model C9 (E)	10/1/2010	300	358	480
0254-1-01	NRAO/Stone Hall	Cummins Model DSGAC (G) Cummins Model QSB7-G5 NR3 (E)	7/15/2014	150	242	324
0264-1-01	Bavaro Hall	Caterpillar Model LC5 (G) Caterpillar Model C9 (E)	6/1/2009	250	297	398
0446-1-01	Culbreth Road Garage	Kohler Model 100REOZJD (G) John Deere 4045HF285 (E)	6/1/2008	100	118	158
0527-1-01	Withers-Brown Hall	Caterpillar Model D125-6 (G) Caterpillar Model C6.6 (E)	9/30/2013	125	162	217
0593-1-01	Ivy Stacks Pump House	Clark model JU4H UFAD4G – Fire Pump	6/1/2011	NA	74.5	100
1146-1-01	Emily Couric Cancer Center	Caterpillar (G) Caterpillar Model C9(E)	3/1/2010	250	297	398
1149-1-01	11 <sup>th</sup> Street Parking Garage	Caterpillar D150-8 (G) Caterpillar C6.6 (E)	1/1/2008	150	205	275
1149-5-01	11 <sup>th</sup> St Garage-Connective Elements	Kohler Model 250REOJE (G) John Deere 6090HF484 (E)	2/16/2011	250	287	385
1176-2-01	Private Clinic – Lithotripter	Caterpillar Model LC5 (G) Caterpillar Model C9 (E)	5/11/2012	250	297	398
1604-1-01	Ivy Mountain Pump House	Kohler Model 125REOZJG	TBD	125	147	197
2368-1-01	Kellogg House	Generac SD200 (G) John Deere 6068HF485 (E)	8/1/2008	200	221	297

Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
2372-1-01	Lile –Maupin House	Kohler 200REOZJF (G) John Deere 6068HF485 (E)	2/19/2013	200	235	315
2373-1-01	Tuttle-Dunnington House	Kohler 200REOZJF (G) John Deere 6068HF485 (E)	2/19/2013	200	235	315
2374-1-01	Shannon House	Kohler 200REOZJF (G) John Deere 6068HF485 (E)	3/21/2013	200	235	315
2375-1-01	Gibbons House	Caterpillar D125-6 (G) Caterpillar C6.6 (E)	6/4/2015	125	205	275
2382-1-02	Gooch Dillard	Caterpillar Model LC5 (G) Caterpillar Model C9 (E)	2018	250	297	398
2464-2-01	WTJU	Cummins Model GGMA-1209141 (G) General Motors GM 3.0L (E)	8/2013	20	23.8	31.9
3755-1-01	Fontaine MOB 1, Neurosurgery Clinic	Caterpillar Model D150-8 (G) Caterpillar Model C6.6 (E)	12/14/2011	150	205	275
3760-1-01	500 Ray C Hunt Drive	Caterpillar Model D100-8 (G) Caterpillar Model C4.4 (E)	5/16/2017	100	120	161
5577-1-01	McCue Center	Caterpillar D50-LC2 (G) Caterpillar C4.4 (E)	3/2017	50	51	69
7147-1-01	Telephone Exchange	Caterpillar Model D150-8 (G) Caterpillar C6.6 (E)	2/15/2011	150	205	275
7186-1-01	East Chiller Plant	Kohler Model 100REOZJF (G) John Deere 4045HF285 (E)	4/15/2013	100	118	158
7369-1-01R	East Water Tank	Generac G0070371 (G) Briggs & Stratton (E)	9/28/2018	16	27	36

Requirements:

§63.6590 (c)(6) – Must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII for compression ignition engines or 40 CFR 60 subpart JJJJ for spark ignition engines. No further requirements apply for such engines under this part.

*New ≤500 HP @ Major HAP – Commenced construction on or after 6/12/06*

### MACT Group 5:

Existing Spark Ignition (SI) Emergency Generators less than or equal to 500 HP at Major Source of HAPs

Ref. No.	Location	Manufacturer and/or Description	Date Installed (<12/19/2002 - former TV units)	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)
0555-1-01	Darden Parking Garage	Onan Model GGFD-4962633 (G) Ford Model ESG642I-6005-A (E) (Natural Gas)	<12/19/2002	35	55.1	73.8
0627-1-01	Police Building	Kohler Model 30RZ282 (G) (Natural Gas)	<12/19/2002	33	41*	55*

\*Calculated value based on 80% efficiency from engine power to generator capacity.

Requirements:

Subject to MACT

*Existing ≤500 HP @ Major HAP – Must have commenced construction before 6/12/06*

MACT Requirements:

§63.6602 – Emission limits in Table 2c

§63.6635(f)(1) – Restrictions on emergency use

### NSPS Group III:

CI Emergency Generators constructed after 6/12/06 – Subject to NSPS, Subpart IIII

Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)	Engine Model Year
0122-1-01	Newcomb Hall	Kohler 40REOZJC (G) John Deere 4024HR285B (E)	9/10/2012	40	60	80	2012
0131-1-01	Elson Student Health	Caterpillar D150-8 (G) Caterpillar C6.6 (E)	9/1/2007	150	205	275	2007

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Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)	Engine Model Year
0201-1-01	O-Hill Dining	Caterpillar (G) Caterpillar Model C27 (E)	10/29/2013	750	905	1214	2013
0204-1-01	Thornton Hall	Kohler 180REOZJD (G) John Deere 6068HF485T (E)	6/5/2008	180	235	315	2008
0210-1-01R	Gilmer Hall	Kohler Model 260RHOZ71	TBD	1000	1099	1474	TBD
0214-1-01	Rice Hall	Caterpillar (G) Caterpillar Model C9 (E)	10/1/2010	300	358	480	2010
0215-1-01	Physical and Life Sciences Building	Caterpillar Model SR5 (G) Caterpillar Model C32 (E)	4/1/2011	1000	1120	1502	2010
0254-1-01	NRAO/Stone Hall	Cummins Model DSGAC (G) Cummins Model QSB7-G5 NR3 (E)	7/15/2014	150	242	324	2014
0256-2-01R	Chemistry Building	Caterpillar Model 3512C	11/20/2018	1500	1645	2206	2017
0264-1-01	Bavaro Hall	Caterpillar Model LC5 (G) Caterpillar Model C9 (E)	6/1/2009	250	297	398	2009
0267-1-01	Wilsdorf Hall	Kohler 1000REOZDB (G) Detroit Diesel Engine	8/1/2006	1000	1115	1495	2006
0396-1-01R	Runk Dining Hall	Caterpillar Model 3512C	7/12/2018	1500	1645	2206	2017
0446-1-01	Culbreth Road Garage	Kohler Model 100REOZJD (G) John Deere 4045HF285 (E)	6/1/2008	100	118	158	2007
0527-1-01	Withers-Brown Hall	Caterpillar D125-6 (G) Caterpillar Model C6.6 (E)	9/30/2013	125	162	217	2013
0580-3-01	Carruthers Hall	Caterpillar Model LC7 (G) Caterpillar C18 (E)	11/17/2011	600	671	900	2010

Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)	Engine Model Year
0593-1-01	Ivy Stacks Pump House (Fire Pump)	Clark Model JU4H UFAD4G	6/1/2011	NA	74.5	100	2010
0599-1-01	University Data Center	Caterpillar (G) Caterpillar 3516CHD (E)	9/3/2010	2500	2710	3634	2010
1142-1-01	Pinn Hall	Kohler 2000REOZMB (G) Mitsubishi S16R-Y2PTAW2-1 (E)	11/1/2010	2000	2180	2923	2010
1146-1-01R	Emily Couric Clinical Cancer Center	Caterpillar Model C15	8/11/2019	500	568	762	2018
1148-5-01	Lee Street Parking Garage- Hospital	Caterpillar Model SR4B (G) Caterpillar C32 (E)	8/1/2010	1000	1120	1502	2009
1149-1-01	11 <sup>th</sup> Street Parking Garage	Caterpillar D150-8 (G) Caterpillar C6.6 (E)	1/1/2008	150	205	275	2006
1149-2-01	11 <sup>th</sup> Street Garage – South Chiller	Caterpillar (G) Caterpillar 3516CHD (E)	4/19/2011	2500	2710	3634	2011
1149-3-01	11 <sup>th</sup> Street Garage – South Chiller	Caterpillar (G) Caterpillar 3516CHD (E)	4/20/2011	2500	2710	3634	2011
1149-4-01	11 <sup>th</sup> Street Garage – Battle Bldg.	Cummins DQGAB-1211506 (G) Cummins QSK50-G4 (E)	12/7/2012	1500	1655	2220	2012
1149-5-01	11 <sup>th</sup> St Garage-Connective Elements	Kohler Model 250REOJE (G) John Deere 6090HF484 (E)	2/16/2011	250	287	385	2011
1149-6-01	11 <sup>th</sup> Street Garage - Hospital	Caterpillar Model 3512C	5/2/2018	1500	1645	2206	2017
1149-7-01	11 <sup>th</sup> Street Garage - Hospital	Caterpillar Model 3512C	5/2/2018	1500	1645	2206	2018
1157-1-01R	MR-4	Caterpillar 500 (G) Caterpillar Model C15 (E)	11/4/2016	500	645	864	2015

Attachment B  
Generator Groups

Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)	Engine Model Year
1161-1-01	Carter-Harrison Research Building	Caterpillar Model SR4B-GD (G) Caterpillar Model 3516B (E)	8/1/2008	2000	2148	2880	2006
1172-1-01	Multistory Bldg	Caterpillar Model LC7 (G) Caterpillar Model C18 (E)	7/1/2009	600	671	900	2008
1176-2-01	Private Clinics – Lithotripter	Caterpillar Model LC5 (G) Caterpillar Model C9 (E)	5/11/2012	250	297	398	2012
1603-5-01	Ivy Mountain CUP	Kohler Model KD800 (G) Kohler Model KD27V12 (E)	TBD	800	891	1195	TBD
1604-1-01	Ivy Mountain Pump House	Kohler Model 125REOZJG	TBD	125	147	197	TBD
1760-1-01	Snyder Translational Research Bldg	Kohler Model 2000REOZMB (G) Mitsubishi S16R-Y2PTAW2-1 (E)	1/1/2008	2000	2180	2923	2007
1985-1-01	Stacey Hall	Caterpillar Model SR4B-GD (G) Caterpillar Model C32 (E)	5/1/2007	1000	1122	1505	2007
2150-1-01	Bond House	Caterpillar Model C13	7/1/2019	350	402	539	2018
2217-1-01	Hancock House	Caterpillar Model C13	3/14/2018	350	396	531	2016
2368-1-01	Kellogg House	Generac SD200 (G) John Deere 6068HF485 (E)	8/1/2008	200	221	297	2007
2371-1-01	Ern Commons	Cummins Model DFEH (G) Cummins Model QSX15-G9 (E)	5/1/2011	400	563	755	2010
2372-1-01	Lile –Maupin House	Kohler 200REOZJF (G) John Deere 6068HF485 (E)	2/19/2013	200	235	315	2011
2373-1-01	Tuttle-Dunnington House	Kohler 200REOZJF (G) John Deere 6068HF485 (E)	2/19/2013	200	235	315	2011
2374-1-01	Shannon House	Kohler 200REOZJF (G)	3/21/2013	200	235	315	2011

Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)	Engine Model Year
		John Deere 6068HF485 (E)					
2375-1-01	Gibbons House	Caterpillar D125-6 (G) Caterpillar C6.6 (E)	6/4/2015	125	205	275	2013
2382-1-01	Gooch Dillard	Caterpillar Model LC5 (G) Caterpillar Model C9 (E)	08/2017	250	297	398	2008
3708-1-01R	UVA Endoscopy Monroe Lane	Caterpillar Model LC6 (G) Caterpillar Model C13 (E)	3/27/2017	400	448	601	2016
3755-1-01	Fontaine MOB 1, Neurosurgery Clinic	Caterpillar Model D150-8 (G) Caterpillar Model C6.6 (E)	12/14/2011	150	205	275	2011
3760-1-01	500 Ray C Hunt Drive	Caterpillar Model D100-8 (G) Caterpillar Model C4.4 (E)	5/16/2017	100	120	161	2016
5577-1-01	McCue Center	Caterpillar D50-LC2 (G) Caterpillar C4.4 (E)	3/2017	50	51	69	2016
7147-1-01	Telephone Exchange	Caterpillar Model D150-8 (G) Caterpillar C6.6 (E)	2/15/2011	150	205	275	2008
7186-1-01	East Chiller Plant	Kohler Model 100REOZJF (G) John Deere 4045HF285 (E)	4/15/2013	100	118	158	2012
7273-1-01	Alderman Road Pumping Station	Caterpillar (G) Caterpillar Model C15 (E)	4/15/2014	500	645	865	2013
7533-2-01R	North Grounds Mechanical Plant	Caterpillar Model 350 (G) Caterpillar Model C15 (E)	5/28/2015	350	532	713	2014

**NSPS Group JJJJ**

SI emergency generators, constructed after 6/12/06– Subject to NSPS, Subpart JJJJ

Ref. No.	Location	Manufacturer and/or Description	Date Installed	Generator Set Size (ekW)	Engine Size (kW)	Engine Size (HP)	Engine Model Year
2464-2-01	WTJU	Cummins Model GGMA-1209141 (G) General Motors GM 3.0L (E)	8/2013	20	23.8	31.9	2012
7369-1-01R	East Water Tank	Generac Model G0070371 (G) Briggs and Stratton (E)	9/28/2018	16	27	36	2018



## Attachment C

## **Main Heat Plant**

### **Boilers 1R, 2R and 5: Short-term Emissions**

(Ref. 7103-1-01R, 7103-1-02R & 7103-1-05)

$$E = F \times N$$

Where:

E = emission rate (lb/time period)

F = pollutant specific emission factor, provided below

N = fuel consumed (million ft<sup>3</sup>/time period for natural gas and ton/time period for coal)

#### **Natural Gas Emission Factors – Boilers 1R, 2R and 5**

Pollutant	Emission Factor <sup>c</sup>	Source of DEQ Factor
PM (lbs/mmcf) <sup>a</sup>	7.60	AP-42 Table 1.4-2
PM10 (lbs/mmcf) <sup>a</sup>	7.60	AP-42 Table 1.4-2
SO <sub>2</sub> (lbs/mmcf) <sup>b</sup>	0.60	AP-42 Table 1.4-2
NO <sub>x</sub> (lbs/mmcf) <sup>b</sup>	36.0	0.036 lb/MMBtu BACT determination for LNB/FGR converted using minimum heat value
CO (lbs/mmcf) <sup>b</sup>	84	AP-42 Table 1.4-1
Lead (lbs/mmcf)	5.E-04	AP-42 Table 1.4-2
VOC (lbs/mmcf)	5.5	AP-42 Table 1.4-2

(a) PM/PM10 emission factors include total condensable and filterable particulate matter.

(b) The use of CEMs data may also be used to show compliance with the short-term emission limitations.

(c) If AP-42 factors are revised, the most recent factors may be used in calculations.

#### **Coal Emission Factors – Boilers 1R, 2R and 5**

Pollutant	Emission Factor <sup>d</sup>	Source of DEQ Factor
PM (lbs/ton) <sup>a</sup>	0.48	0.02 lb/MMBTU BACT determination converted using minimum heat value
PM10 (lbs/ton) <sup>a</sup>	0.48	0.02 lb/MMBTU BACT determination converted using minimum heat value
SO <sub>2</sub> (lbs/ton) <sup>b, c</sup>	4.26	AP-42 (38 *S) at Max Sulfur Indicated with BACT control efficiency
NO <sub>x</sub> (lbs/ton) <sup>c</sup>	8.33	0.35 lb/MMBtu BACT determination converted using minimum heat value
CO (lbs/ton) <sup>b</sup>	5	AP-42 Table 1.1-3
Lead (lbs/ton)	4.20E-04	AP-42 Table 1.1-18
VOC (lbs/ton)	0.05	AP-42 Table 1.1-19

(a) PM/PM10 emission factors are for filterable particulate matter only.

(b) SO<sub>2</sub> emission factor is based on maximum allowable sulfur content of coal burned.

(c) The use of CEMs data may also be used to show compliance with the short-term emission limitations.

(d) If AP-42 factors are revised, the most recent factors may be used in calculations.

**Boilers 3R and 4: Short-term Emissions**  
(Ref. 7103-1-03R and 7103-1-04)

$$E = F \times N$$

Where:

E = emission rate (lb/time period)

F = pollutant specific emission factor, provided below

N = fuel consumed (million ft<sup>3</sup>/time period for natural gas and 1000 gal/time period for distillate oil)

**Natural Gas Emission Factors – Boilers 3R and 4R**

Pollutant	Emission Factor <sup>c</sup>	Source of DEQ Factor
PM (lbs/mmcuft) <sup>a</sup>	7.6	AP-42 Table 1.4-2
PM10 (lbs/mmcuft) <sup>a</sup>	7.6	AP-42 Table 1.4-2
NO <sub>x</sub> (lbs/mmcuft) <sup>b</sup>	30.0	0.03 lb/MMBtu BACT determination for LNB converted using minimum heat value
CO (lbs/mmcuft)	84	AP-42 Table 1.4-1
SO <sub>2</sub> (lbs/mmcuft)	0.6	AP-42 Table 1.4-2
Lead (lbs/mmcuft)	5.E-04	AP-42 Table 1.4-2
VOC (lbs/mmcuft)	5.5	AP-42 Table 1.4-2

<sup>(a)</sup> PM/PM10 emission factors include total condensable and filterable particulate matter.

<sup>(b)</sup> The use of CEMs data may also be used to show compliance with the short-term emission limitations.

<sup>(c)</sup> If AP-42 factors are revised, the most recent factors may be used in calculations.

**Distillate Oil Emission Factors – Boilers 3R and 4R**

Pollutant	Emission Factor <sup>c</sup>	Source of DEQ Factor
Filterable PM (lbs/1000gal)	2	AP-42 Table 1.3-1
Filterable PM10 (lbs/1000gal)	1.08	AP-42 Table 1.3-7
Condensable PM/PM10 (lbs/1000gal)	1.3	AP-42 Table 1.3-2
SO <sub>2</sub> (lbs/1000gal) <sup>a</sup>	7.1	AP-42 (142*S) at Max Allowable Sulfur
NO <sub>x</sub> (lbs/1000gal) <sup>b</sup>	24	AP-42 Table 1.3-1
CO (lbs/1000gal)	5	AP-42 Table 1.3-1
Lead (lbs/1000gal)	1.22E-03	AP-42 Table 1.3-10 converted from 9 lb/10 <sup>12</sup> btu using average heat content
VOC (lbs/1000gal)	0.2	AP-42 Table 1.3-3

<sup>(a)</sup> SO<sub>2</sub> emission factor is based on the maximum allowable sulfur content of oil burned.

<sup>(b)</sup> The use of CEMs data may also be used to show compliance with the short-term emission limitations.

<sup>(c)</sup> If AP-42 factors are revised, the most recent factors may be used in calculations.

**Boiler 6**  
(Ref. 7103-1-06)

$$E = F \times N$$

Where:

- E = emission rate (lb/time period)  
F = pollutant specific emission factor, provided below  
N = fuel consumed (million ft<sup>3</sup>/time period for natural gas and 1000 gal/time period for distillate oil)

*Natural Gas Emission Factors – Boiler 6*

Pollutant	Emission Factor <sup>c</sup>	Source of DEQ Factor
PM (lbs/mmcf)	1.9	AP-42 Table 1.4-2
PM-10 (lbs/mmcf) <sup>a</sup>	7.6	AP-42 Table 1.4-2
PM-2.5 (lbs/mmcf) <sup>a</sup>	7.6	AP-42 Table 1.4-2
NO <sub>x</sub> (lbs/mmcf) <sup>b</sup>	30.0	0.03 lb/MMBtu (LNB Requirement)
CO (lbs/mmcf)	84	AP-42 Table 1.4-1
SO <sub>2</sub> (lbs/mmcf)	3.0	AP-42 Table 1.4-2
VOC (lbs/mmcf)	5.5	AP-42 Table 1.4-2

<sup>(a)</sup> PM-10/PM-2.5 emission factors include total condensable and filterable particulate matter

<sup>(b)</sup> The use of CEMs data may also be used to show compliance with the short-term emission limitations.

<sup>(c)</sup> If AP-42 factors are revised, the most recent factors may be used in calculations.

*Distillate Oil Emission Factors – Boiler 6*

Pollutant	Emission Factor <sup>c</sup>	Source of DEQ Factor
Filterable PM (lbs/1000gal)	2	AP-42 Table 1.3-1
Total PM-10 (lbs/1000gal)	2.38	AP-42 Table 1.3-7
Total PM-2.5 (lbs/1000gal)	2.13	AP-42 Table 1.3-2
SO <sub>2</sub> (lbs/1000gal) <sup>a</sup>	7.1	AP-42 (142*S) at Max Allowable Sulfur
NO <sub>x</sub> (lbs/1000gal) <sup>b</sup>	20	AP-42 Table 1.3-1
CO (lbs/1000gal)	5	AP-42 Table 1.3-1
VOC (lbs/1000gal)	0.34	AP-42 Table 1.3-3

<sup>(a)</sup> SO<sub>2</sub> emission factor is based on the maximum allowable sulfur content of oil burned.

<sup>(b)</sup> The use of CEMs data may also be used to show compliance with the short-term emission limitations.

<sup>(c)</sup> If AP-42 factors are revised, the most recent factors may be used in calculations.

## Other Fuel Burning Equipment

### Unilux boilers (Ref. 5575-1-01 through 5575-1-04)

$$E = F \times N$$

Where:

E = emission rate (lb/time period)

F = pollutant specific emission factor, provided below

N = fuel consumed (million ft<sup>3</sup>/time period for natural gas and 1000 gal/time period for distillate oil)

#### Natural Gas Emission Factors – Unilux boilers (Ref. 5575-1-01 through 5575-1-04)

Pollutant	Emission Factor <sup>b</sup>	Source of DEQ Factor
PM (lbs/mmcf) <sup>a</sup>	1.9	AP-42 Table 1.4-2 (filterable)
PM10 (lbs/mmcf) <sup>a</sup>	7.6	AP-42 Table 1.4-2 (filterable and condensable)
PM2.5 (lbs/mmcf) <sup>a</sup>	7.6	AP-42 Table 1.4-2 (filterable and condensable)
SO <sub>2</sub> (lbs/mmcf)	0.6	AP-42 Table 1.4-2
NO <sub>x</sub> (lbs/mmcf)	50	AP-42 Table 1.4-1 for low NO <sub>x</sub> burners
CO (lbs/mmcf)	84	AP-42 Table 1.4-1
VOC (lbs/mmcf)	5.5	AP-42 Table 1.4-2

<sup>(a)</sup> PM emission factor includes filterable particulate matter only. PM2.5/PM10 emission factors include total condensable and filterable particulate matter

<sup>(b)</sup> If AP-42 factors are revised, the most recent factors may be used in calculations.

#### Distillate Oil Emission Factors – Unilux boilers (Ref. 5575-1-01 through 5575-1-04)

Pollutant	Emission Factor <sup>c</sup>	Source of DEQ Factor
PM (lbs/1000gal) <sup>b</sup>	2.0	AP-42 Table 1.3-1 (filterable)
PM10 (lbs/1000gal) <sup>b</sup>	2.38	AP-42 Table 1.3-2 (filterable) and AP-42 Table 1.3-7 (condensable)
PM2.5 (lbs/1000gal) <sup>b</sup>	2.13	AP-42 Table 1.3-2 (condensable) and AP-42 Table 1.3-7 (filterable)
SO <sub>2</sub> (lbs/1000gal) <sup>a</sup>	7.1	AP-42 Table 1.3-1 at Max Sulfur Indicated
NO <sub>x</sub> (lbs/1000gal)	20	AP-42 Table 1.3-1
CO (lbs/1000gal)	5	AP-42 Table 1.3-1
VOC (lbs/1000gal)	0.20	AP-42 Table 1.3-3

<sup>(a)</sup> SO<sub>2</sub> emission factor is based on average sulfur content of oil burned.

ATTACHMENT C  
EMISSION FACTORS AND EQUATIONS

<sup>(b)</sup> PM emission factor includes filterable particulate matter only. PM<sub>2.5</sub>/PM<sub>10</sub> emission factors include total condensable and filterable particulate matter

<sup>(c)</sup> If AP-42 factors are revised, the most recent factors may be used in calculations.

## Attachment D

## 40 CFR 63 Subpart DDDDD – Boiler Groupings

### GROUP 1: BOILERS SUBJECT TO REQUIREMENT FOR ANNUAL TUNE-UP

Unit Ref. No.	Emission Unit Description	Location	Installation	New or Existing?	Fuel	Size/Rated Capacity
1760-2-01	Cleaver Brooks Model CB/LE 700-250-125 HW	Sheridan G. Snyder Building	2007	Existing	Natural Gas	10.206 MMBtu/hr
1760-2-02	Cleaver Brooks Model CB/LE 700-250-125 HW	Sheridan G. Snyder Building	2007	Existing	Natural Gas	10.206 MMBtu/hr

### GROUP 2: BOILERS SUBJECT TO REQUIREMENT FOR TUNE-UP AT LEAST EVERY TWO YEARS

Unit Ref. No.	Emission Unit Description	Location	Installation	New or Existing?	Fuel	Size/Rated Capacity
0595-1-01	Cleaver Brooks Model CB 700-150 steam boiler	Fontana Food Center	1982	Existing	Natural Gas	6.277 MMBtu/hr
1760-3-01	Fulton Model VMP-150 steam boiler	Sheridan G. Snyder Building	2007	Existing	Natural Gas	5.978 MMBtu/hr
1760-3-02	Fulton Model VMP-150 steam boiler	Sheridan G. Snyder Building	2007	Existing	Natural Gas	5.978 MMBtu/hr
3761-3-01	York-Shipley Model SPHV-150-N 096130	Aurbach Medical Bldg	2001	Existing	Natural Gas	6.1 MMBtu/hr
3761-3-02	York-Shipley Model SPHV-150-N 096130	Aurbach Medical Bldg	2001	Existing	Natural Gas	6.1 MMBtu/hr
5575-3-01	Unilux - Model ZF500W	Massie Road Heat Plant	2014	New	Natural Gas	5.4 Million BTU/hr
5575-3-02	Unilux - Model ZF500W	Massie Road Heat Plant	2014	New	Natural Gas	5.4 Million BTU/hr
7533-3-01	Fulton VTG-6000DF Condensing Boiler	North Grounds Heat Plant	2014	New	Natural Gas Distillate Oil	6.0 Million BTU/hr
7533-4-01	Fulton VTG-6000DF Condensing Boiler	North Grounds Heat Plant	2014	New	Natural Gas Distillate Oil	6.0 Million BTU/hr



Unit Ref. No.	Emission Unit Description	Location	Installation	New or Existing?	Fuel	Size/Rated Capacity
7533-5-01	Fulton VTG-6000DF Condensing Boiler	North Grounds Heat Plant	2014	New	Natural Gas Distillate Oil	6.0 Million BTU/hr
7533-6-01	Boiler	North Grounds Mechanical Plant	TBD	New	Natural Gas Distillate Oil	6.0 Million BTU/hr
7533-7-01	Boiler	North Grounds Mechanical Plant	TBD	New	Natural Gas Distillate Oil	6.0 Million BTU/hr

**GROUP 3: BOILERS SUBJECT TO REQUIREMENT FOR TUNE-UP AT LEAST EVERY FIVE YEARS**

Unit Ref. No.	Emission Unit Description	Location	Installation	New or Existing?	Fuel	Size/Rated Capacity
0215-2-01	Fulton Model VMP-40 steam boiler	CAS Building	2010	Existing	Natural Gas	1.595 MMBtu/hr
0261-1-01	Cleaver Brooks Model CB100-100	Shelburne Hall	1972	Existing	Natural Gas	4.184 MMBtu/hr
0321-1-01R	Smith Cast Iron Model 19HE-09 steam boiler	Aerospace Research Lab	2017	New	Natural Gas	1.559 MMBtu/hr
0550-1-01	TELEDYNE LAARS Model HH 3050 IN 04 FC	Saunders Hall	1994	Existing	Natural Gas	3.05 MMBtu/hr
0550-1-02	TELEDYNE LAARS Model HH 3050 IN 04 FC	Saunders Hall	1994	Existing	Natural Gas	3.05 MMBtu/hr
0550-1-03	TELEDYNE LAARS Model HH 3050 IN 04 FC	Saunders Hall	2000	Existing	Natural Gas	3.05 MMBtu/hr
0580-2-01R	Hydrotherm Model KN-16	Carruthers Hall	2013	New	Natural Gas	1.6 Million BTU/hr
0603-1-01R	Hydrotherm Model KN-20	Faulkner House	2013	New	Natural Gas	1.99 Million BTU/hr
1603-1-01	Fulton Model VTG-4000DF	Ivy Mountain CUP	2020	New	Natural Gas Distillate Oil	4.0 MMBtu/hr

Unit Ref. No.	Emission Unit Description	Location	Installation	New or Existing?	Fuel	Size/Rated Capacity
1603-2-01	Fulton Model VTG-4000DF	Ivy Mountain CUP	2020	New	Natural Gas Distillate Oil	4.0 MMBtu/hr
1603-3-01	Fulton Model VTG-4000DF	Ivy Mountain CUP	2020	New	Natural Gas Distillate Oil	4.0 MMBtu/hr
1985-2-01	Peerless Model LCE-13-W/S	Stacey Hall	2008	Existing	Natural Gas	2.464 MMBtu/hr
1985-2-02	Peerless Model LCE-13-W/S	Stacey Hall	2008	Existing	Natural Gas	2.464 MMBtu/hr
1991-1-01	Cleaver Brooks - Model FLX-700-350-150 ST Steam boiler	Battle Building	2014	New	Natural Gas	3.50 Million BTU/hr
2566-1-01	Buderus Logano Model GE515/10	Mitchell Apartments	2008	Existing	Natural Gas	1.66 MMBtu/hr
3761-2-01	York-Shipley Model SPHV-72-N 094219 steam boiler	Aurbach Medical Building	2002	Existing	Natural Gas	3.019 MMBtu/hr
3761-2-02	York-Shipley Model SPHV-72-N 094219 steam boiler	Aurbach Medical Building	2002	Existing	Natural Gas	3.019 MMBtu/hr
5562-1-01	Fulton - Model PHW-2000	North Grounds Rec Center	2013	New	Natural Gas	2.00 Million BTU/hr
5562-2-01	Fulton - Model PHW-2000	North Grounds Rec Center	2013	New	Natural Gas	2.00 Million BTU/hr
5562-3-01	Lochinvar - Model CPN2072	North Grounds Rec Center	2013	New	Natural Gas	2.07 Million BTU/hr
5575-1-01	Unilux Bent Water Tube Model ZF1200	Massie Road Heat Plant	2005	Existing	Natural Gas Distillate Oil	9.9 MMBtu/hr
5575-1-02	Unilux Bent Water Tube Model ZF1200	Massie Road Heat Plant	2005	Existing	Natural Gas Distillate Oil	9.9 MMBtu/hr
5575-1-03	Unilux Bent Water Tube Model ZF1200	Massie Road Heat Plant	2005	Existing	Natural Gas Distillate Oil	9.9 MMBtu/hr

Unit Ref. No.	Emission Unit Description	Location	Installation	New or Existing?	Fuel	Size/Rated Capacity
5575-1-04	Unilux Bent Water Tube Model ZF1200	Massie Road Heat Plant	2005	Existing	Natural Gas Distillate Oil	9.9 MMBtu/hr